GE Medical Systems

LOGIQ™ 700 Quick Start Guide

CE 0459

Direction 2227865–100

Revision 0

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User Documentation

REVISION HISTORY

REV	DATE	REASON FOR CHANGE
0	May 21, 1999	6.5 and 8.0 Releases

LIST OF EFFECTIVE PAGES

PAGE NUMBER	REVISION NUMBER	PAGE NUMBER	REVISION NUMBER	PAGE NUMBER	REVISION NUMBER
Title	0	1–30	0		
Revision History	0	Back Page	N/A		

Please verify that you are using the latest revision of this document. Information pertaining to this document is maintained on GPC (GE Medical Systems Global Product Configuration). If you need to know the latest revision, contact the GE Ultrasound Clinical Answer Center at 1–800–682–5327 or 414–524–5698, #1 for Applications; #5 for Ultrasound.

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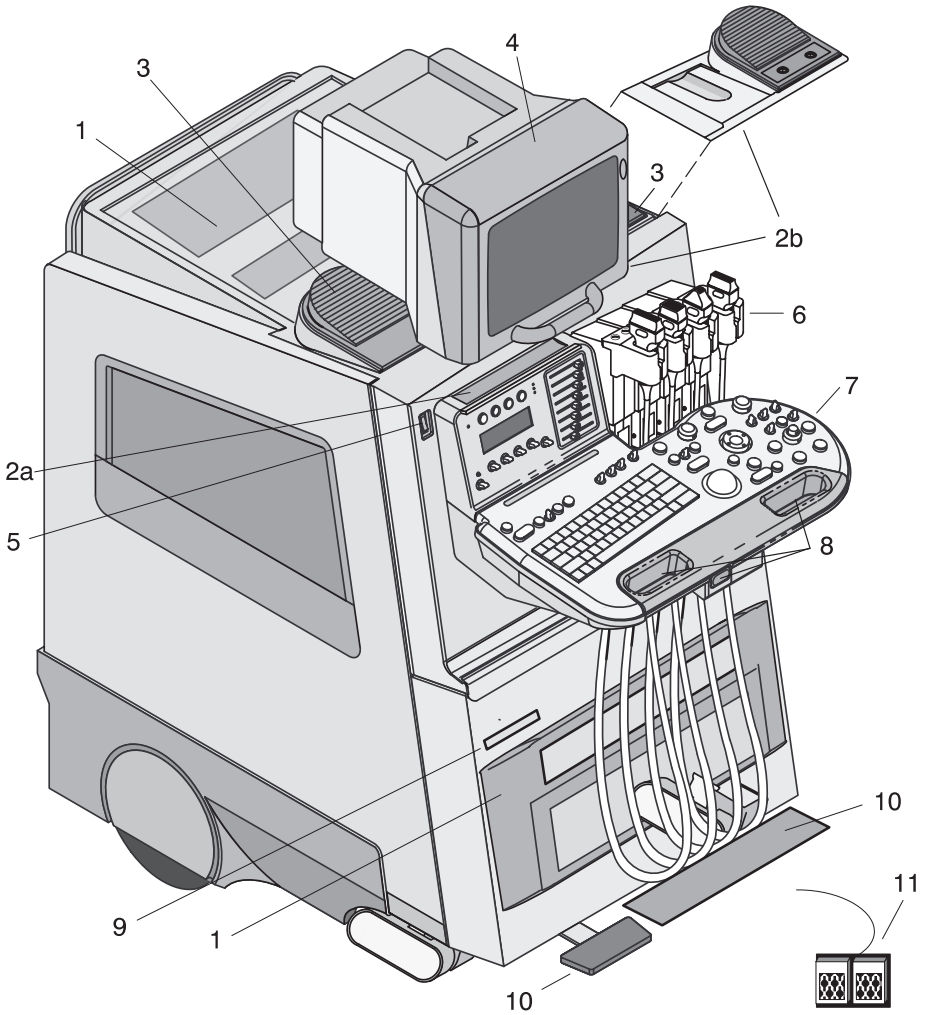
USA Only CAUTION: “United States law restricts this device to sale or use by or on the order of a physician” if sold in the United States.

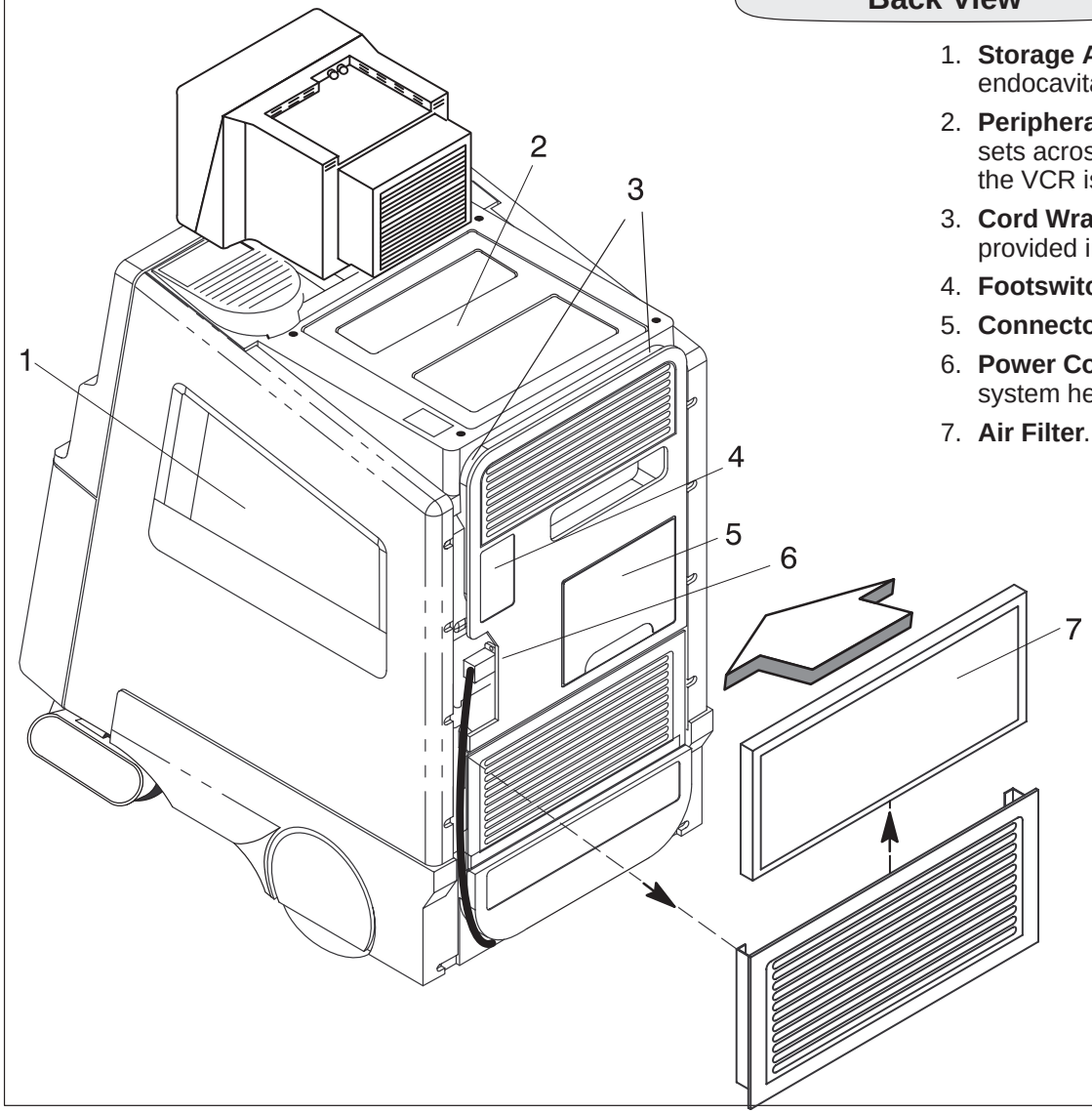
CAUTION Read and understand the LOGIQ™ 700 Basic User Manual (2227866–100) and the Advanced Reference Manual (2227867–100) for operational details and safety concerns.

Front View



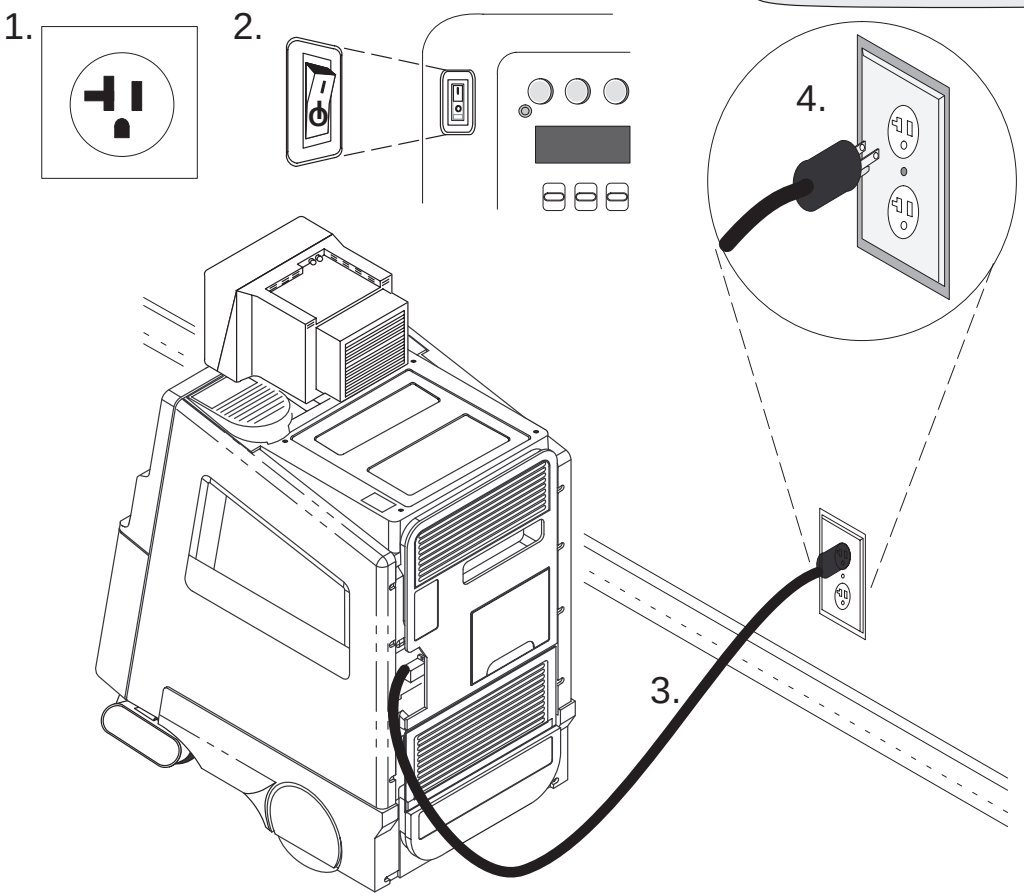
1. **Peripherals**. Peripherals are placed in front for Release 8.0 EXPERT and PRO Series or on top for Release 8.0 Update and 6.5.
2. **Gel Holders**.
   a. Top of Control Panel. Place the gel bottle here.
   b. Below Display Monitor. Warm and store the gel bottle here.
3. **Speakers**. Stereo speakers are provided for audio Doppler, VCR playback, and error notification.
4. **Display Monitor**. System imaging monitor.
5. **Power Switch**. On/Stand-by switch.
6. **Probe Holders and Probes**. All imaging probes can be plugged into any of the probe ports. Probes are automatically activated when the probe is lifted from its yoke (or manually via **[Code S]**), except for the 618e, 739 I/T.
7. **Control Panel**. All operator controls are located on the Control Panel.
8. **Handles and Raise/Lower Button**. Use the handles to move the system. Use the button to raise and lower the control panel. Push and hold the button while moving the control panel up/down.
9. **Optical Disk**. Optical disk and disk storage areas.
10. **Brake and Footrest**. The brake pedal and footrest (the footrest is not available on all systems).
11. **Footswitch**. Use the footswitch to freeze an image or to send an image to the designated hard copy device.

Back View



1. **Storage Area**. Use the storage area to store the *Quick Start*, VCR tapes, endocavitary probe, gel, sheaths, etc.
2. **Peripherals**. Peripheral shelf for Release 8.0 Update and 6.5. The printer sets across the peripheral shelf. The VCR can be set on top of the printer. If the VCR is the only peripheral, place it here.
3. **Cord Wrap**. Wrap the cord around the Power Cord Wrapping fixture provided in the back of the unit.
4. **Footswitch Storage**. Used to store the footswitch.
5. **Connector Panel**. Used to connect peripheral devices to the system.
6. **Power Cord** and **Circuit Breaker**. The Power Cord connects into the system here and the Circuit Breaker is located here.
7. **Air Filter**. The Air Filter is located in the back of the unit.

Power

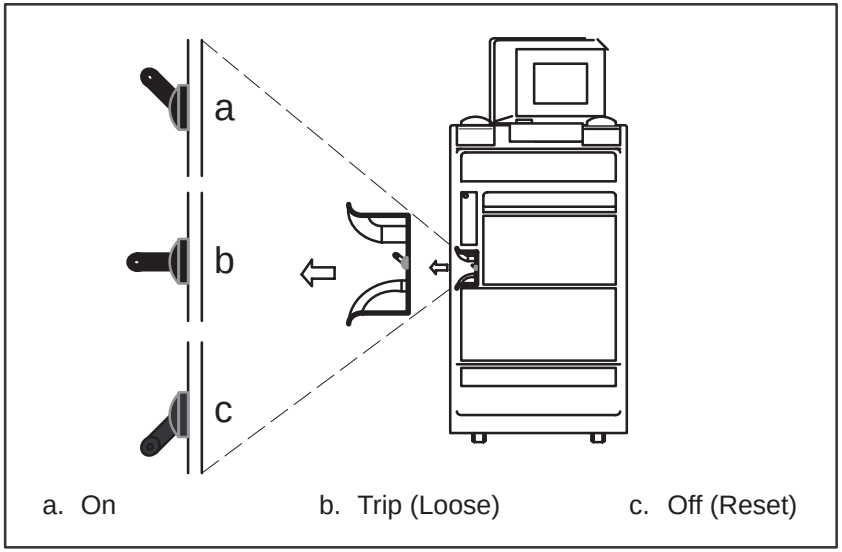


To connect the system to the electrical supply (refer to the illustration),

WARNING

1. Ensure that the wall outlet is a dedicated 15/20 Amp branch circuit of the appropriate type, depending on the system.
2. Make sure that the system's power switch is turned off.
3. Unwrap the power cable. Make sure you allow sufficient slack in the cable so that the plug is not pulled out of the wall if you move the system.
4. Push the power plug securely into the wall outlet.

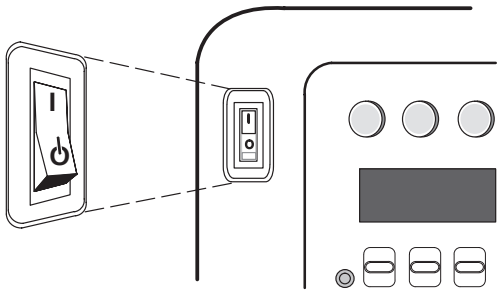
Keep unit one foot (30.5 cm) from wall or curtains/drapes.



a. On b. Trip (Loose) c. Off (Reset)

The **Circuit Breaker** is located at the back of the console, on the left side. It is used for turning off (disconnecting) all power to the system. It automatically trips power to the system in case of power overload.

Power On/Off



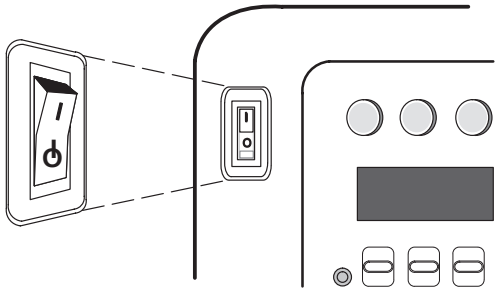
CAUTION The **Power On/Stand-by** switch is located on the front of the console on the left side.

To power on the system,

1. Push the **Power on/Stand-by** switch up.

The following happens over the next several minutes:

1. The control panel lights turn on, then off.
2. The system is initialized. During this time,
   - Start up status messages scroll across the SoftMenu.
   - Relays click on and the LOGIQ™ 700 MR, EXPERT, or PRO screen appears.
   - Controls available for a particular mode are dimly lit; controls not available for a particular mode are not lit.



Prior to turning off the system, ensure that you have:

- Made all necessary image, worksheet, and summary report hard copies.
- Waited until archive copy and delete commands have been completed; all prints have been produced; and that all queued DICOM jobs have been sent.

To power down the system,

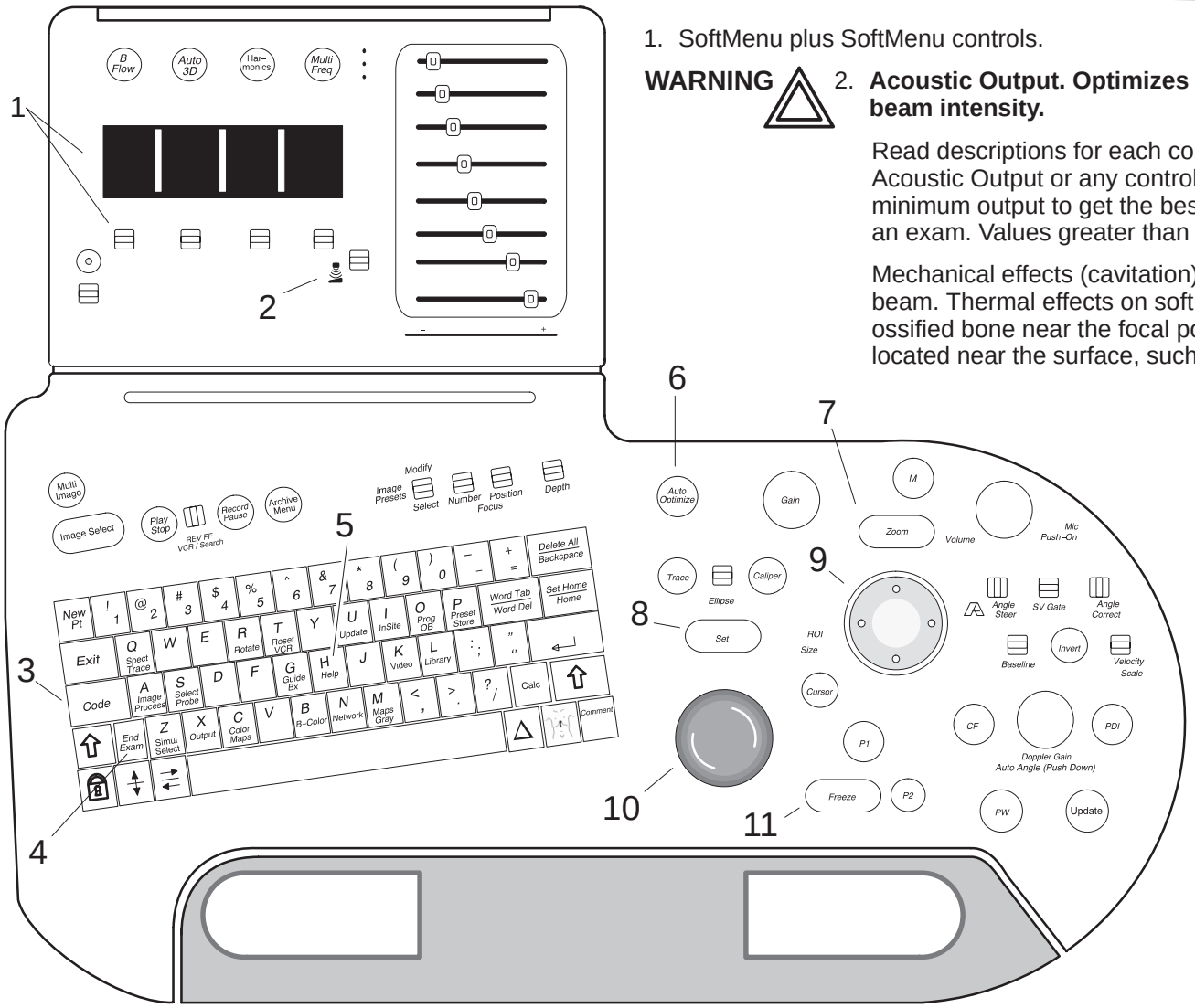
1. Push down on the **Power On/Stand-by** switch.

After power down each day:

- Disinfect probes.

Wait ten to fifteen (10–15) seconds before switching system back on after power down and do not turn off the system immediately after turning it on.

Control Panel



1. SoftMenu plus SoftMenu controls.

WARNING 2. **Acoustic Output. Optimizes image quality and allows user to reduce beam intensity.**

Read descriptions for each control you intend to use before adjusting Acoustic Output or any control that affects Acoustic Output. Use the minimum output to get the best diagnostic image or measurement during an exam. Values greater than 0.1 are displayed.

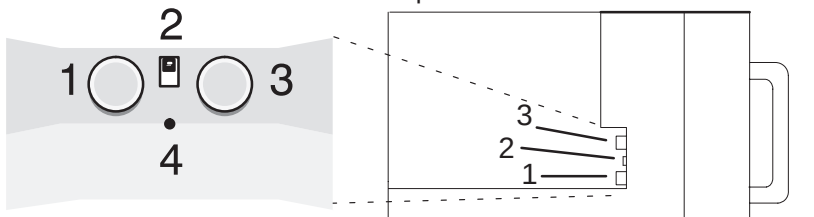
Mechanical effects (cavitation) on biological tissue produced by acoustic beam. Thermal effects on soft tissue. Thermal effects on tissue with ossified bone near the focal point of the beam. Thermal effects on bone located near the surface, such as the cranium.

3. Code Key. Pressing this key plus a letter activates system features.
4. DICOM End Exam. Sends DICOM jobs at end of DICOM exam.
5. Online Help. Press **[Code H]** for online help.
6. Auto Optimize. Optimizes the image in B Mode, Color Flow Mode, and Doppler Mode.
7. Zoom. Magnifies the image.
8. Set. Fixes cursors, accesses/exits tasks, and cycles through menu selections.
9. ROI Size. Sizes the region of interest, views recalled archive or CINE images one image at a time, pages through a series of menu pages, and cycles through body patterns.
10. Trackball. Multiple uses.
11. Freeze. Freezes/unfreezes the image.

Control Panel Layout

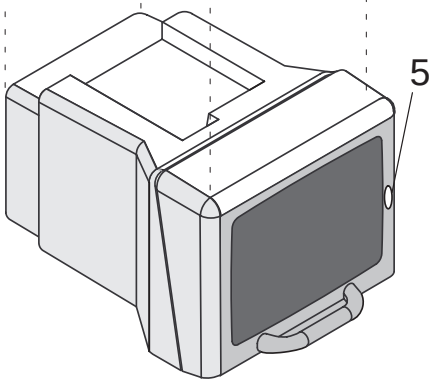
Adjusting the Monitor

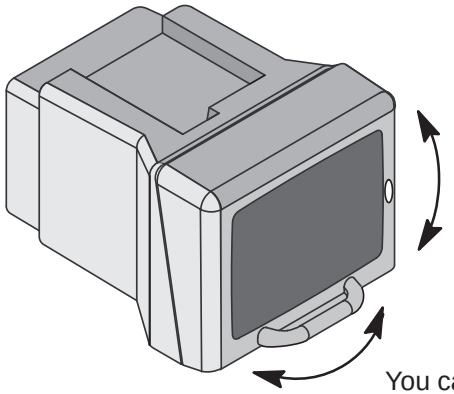
Adjusting the Monitor



Top View

1. Brightness
2. ALC On/Off
3. Contrast
4. Degaussing Control
5. Ambient Light Control Sensor

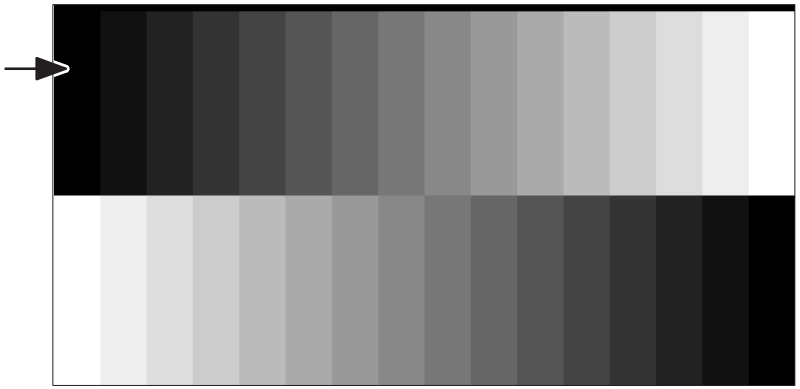




You can tilt the monitor up and down and pivot the monitor 85° to the left and right.

To adjust the **Brightness**,

Press **[Code K]**. Click the **VIDEO TEST PATTERN** softkey. Images are recalled in a few moments. Press **ROI Size** until the following test pattern appears:



Turn the brightness knob to the left or right until monitor's background black matches the black in the upper, left-hand rectangle of the test pattern. This is probably not the detent position.

To adjust the **Contrast**,

- Turn the contrast knob to the left or right.
- Increase the **Contrast** to display the complete or desired range of gray shades.

Press **Freeze** to return to scanning.

Do not change the controls once they have been set. Once set, the display then becomes the reference for the hard copy device(s).

Connecting

CAUTION

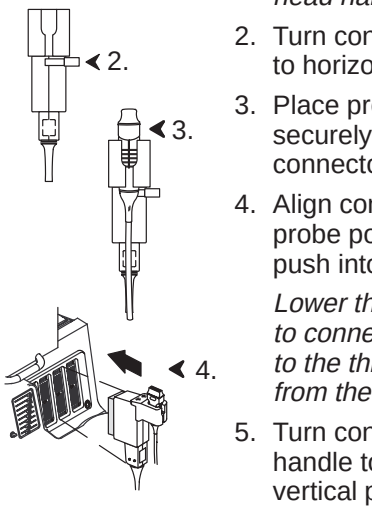
1. Carefully remove probe from carrying case.

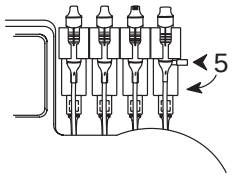
   ***DO NOT** let probe head hang free.*

2. Turn connector handle to horizontal position.
3. Place probe head securely into probe connector yoke.
4. Align connector with probe port and carefully push into place.

   Lower the control panel to connect AMA probes to the third probe port from the left.

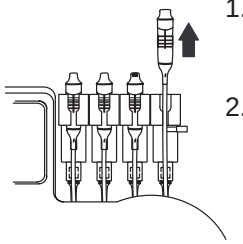
5. Turn connector locking handle to the full vertical position.





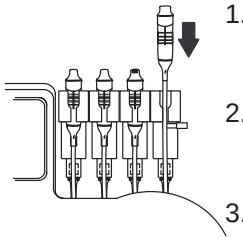
Failure to lock the connector in place **MAY CAUSE** intermittent problems with probes already connected.

Activating (Automatic)



1. Carefully lift probe upward until probe is free of probe holder.
2. Carefully slide probe away from probe holder and around control panel.

Deactivating



1. Carefully slide probe around control panel toward its probe holder.
2. Match the colored ring on probe to colored ring on probe holder.
3. Place probe into its probe holder.

DO NOT apply excess force to probe head or to probe holder.

Follow recommended cleaning instructions after each use.

Activating (Manual)

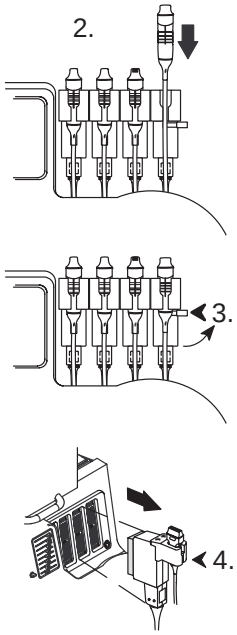
To manually activate a probe (618e, 739I/T),

1. Press **[Code S]**.
2. Click **PROBE ID** softkey corresponding to desired probe.

To reset to automatic activation,

1. Press **[Code S]**. Click **Previous/Next**.
2. Click **AUTO**.

Disconnecting



1. Be sure that the probe head is clean before disconnecting the probe.
2. Place the probe in its corresponding probe holder.
3. Move the probe locking handle into the horizontal position.
4. Pull the probe and connector straight out of the probe port.
5. Carefully slide the probe and connector away from the probe port and around the right side of the keyboard.
6. Ensure the cable is free, then store the probe in its carrying case.

Peripheral Setup

Presetting Print Keys/VCR

1

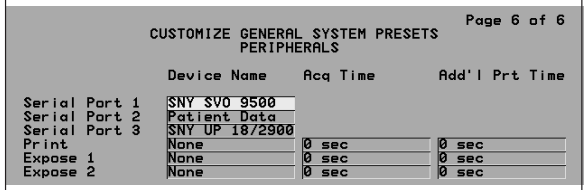
Code + P

To go to the preset menu,

1. Press **[Code P]**.

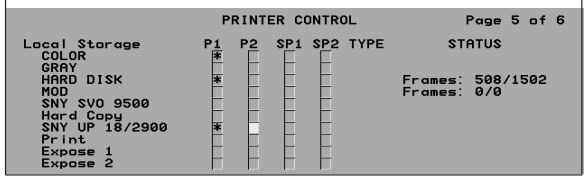
To preset the peripheral devices,

1. Press **ROI Size** until you reach Page 6 of 6. Press **Set** to select **SNY SVO 9500** for **Serial Port 1**.
2. Press **Set** to select **SNY UP 18/2900** for **Serial Port 3** (Sony 1800/2900 printer).



To specify print keys **P1/2** or **Shift + P1/2**.

1. Press **ROI Size** to the left until you reach Page 5 of 6.
2. Specify the print key and color. **Trackball** to the appropriate print key under **COLOR** or **GRAY**, then press **Set** to place an asterisk to select.
3. Specify archive/print parameters by placing an asterisk under the appropriate print key next to **HARD DISK**, **MOD**, **SNY UP 2900**, DICOM device, etc. Press **Exit** to save.



To Print...

2

Freeze

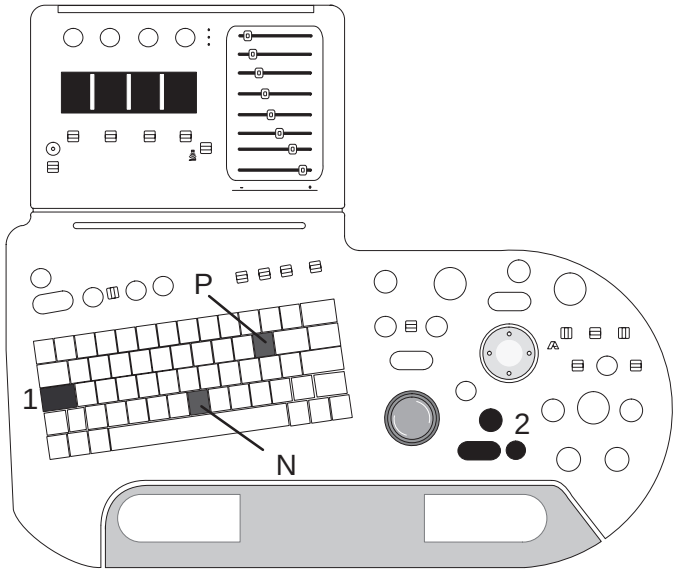
P1

To record the image onto the printer, camera, or disk storage that has been preset,

1. Press **Freeze**.
2. Press **P1/2**, or **Shift + P1/2** (**SP1/2**).

*An optional footswitch may be used to print images sent to **P1**.*

The displayed archive reference number (IM#) indicates the number of the next image to be archived.

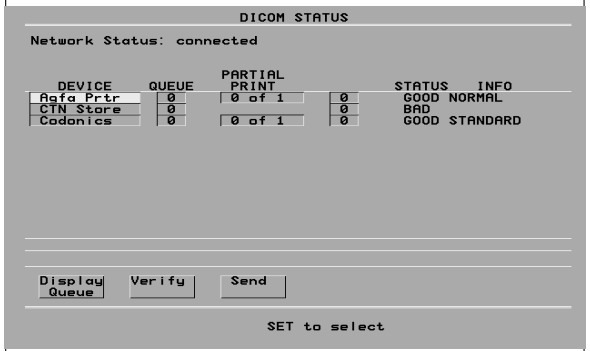


DICOM

To set up DICOM,

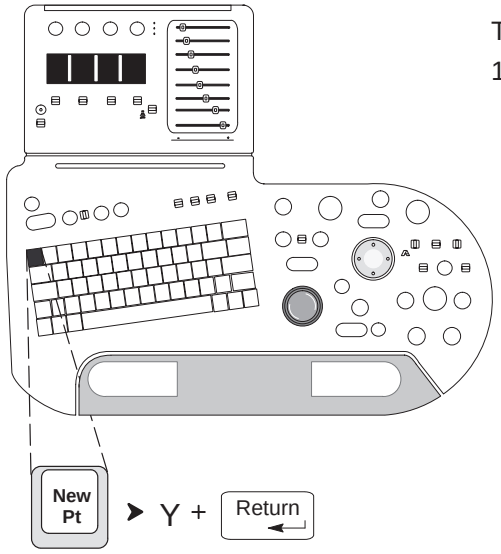
1. Ensure that the network is physically connected.
2. Configure the LOGIQ™ 700 to the network via **[Code P]**, Page 4 of 6.
3. Set up each DICOM device via **[Code N]**, the Device Configuration menu. Make sure to activate the device.
4. Tie each DICOM print and storage device to a print key via **[Code P]**, Page 5 of 6.
5. Set up Worklist search/display criteria via **[Code N]**, the Worklist Setup menu. Make sure to at least search on the patient's first and last name, date of birth, gender, ID, and exam Accession Number.

To monitor/control DICOM devices, Press **[Code N]**. The DICOM Status menu appears.



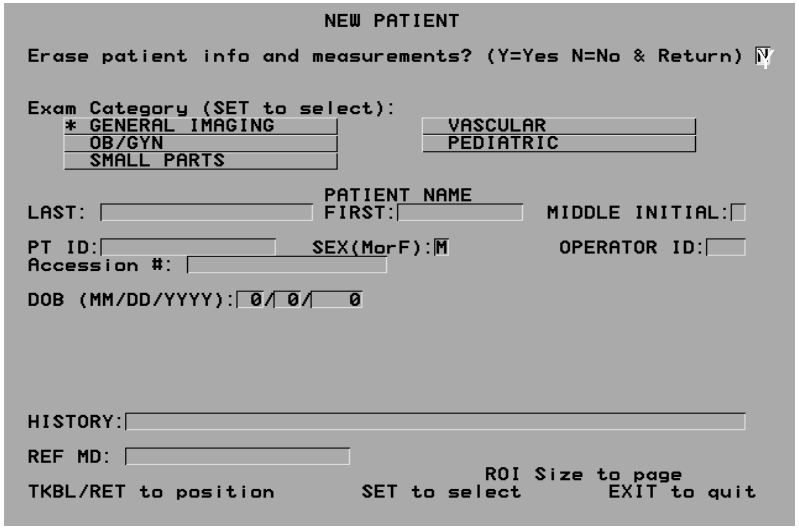
Via the DICOM Status menu you can verify devices, determine which jobs are in the queue for a particular device, send jobs to a different device, or delete jobs. Refer to the DICOM chapter in the *Advanced Reference Manual.*

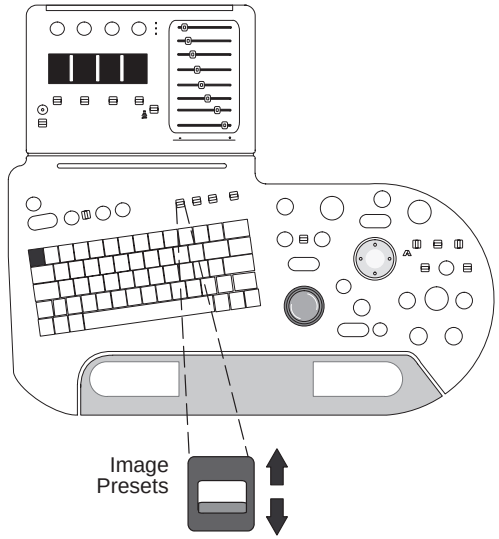
Starting an Exam



To start a new patient exam,

1. Press **New Pt**.





2. Type a **Y** to verify that this is a new patient. Press **Return**.
3. **Trackball** to select the appropriate exam category. Press **Set**.

   Exam Category determines presets, available applications, and worksheets.
4. Fill in appropriate patient data, OR, for DICOM users, press **ROI Size** to go to the Worklist Schedule. **Trackball** to select a patient, then press **Set**. The New Patient menu appears with the data filled in. Press **Exit**.
5. Select the application. **Image Presets** selects, modifies, creates, archives, or views system or user presets.

Remember, user and factory-defined presets are dependent upon the Exam Category and Application selected on the New Patient Menu and Image Presets softkey.

6. Select a probe. Begin scanning.

To end a DICOM exam, press **End Exam**. This sends all queued images and partial print jobs to the specified device (one job at a time).

Auto Optimize

Auto Optimize (**AUTO**) optimizes the image based upon a specified region of interest or anatomy within the B Mode image, Color Flow ROI, or Spectral Doppler in order to improve the contrast of the displayed image data.

AUTO is available in single/multi image, on live, frozen, or CINE images, and while in zoom in Spectral Doppler.

AUTO is not available on archived images.

AUTO Color Flow

AUTO in Color Flow Mode optimizes the Color Flow ROI by adjusting the Color Flow or PDI maps and thresholds and PDI compression curves. **AUTO** improves overall color sensitivity, especially in low–flow states. This improves the color performance while reducing optimization time.

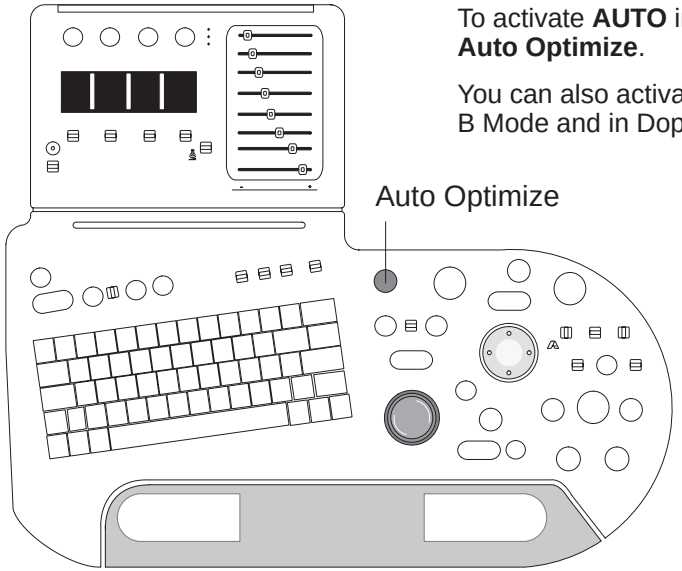
*In **AUTO** Color Flow, the baseline must be set at zero. In PDI, you cannot create an AUTO topographic map.*

AUTO Spectral Doppler

AUTO in Doppler Mode optimizes the spectral data. **AUTO** adjusts the velocity scale/PRF, baseline shift, dynamic range, gray maps, invert (if preset), and angle (if preset). The benefit of **AUTO** can be found in reduced optimization time and a more consistent and accurate optimization process. Upon deactivation, the spectrum is returned to the original map and dynamic range; however, the velocity scale, baseline, and angle is still optimized.

*In **AUTO** Spectral Doppler, ask the patient to hold still while activating **AUTO**. You may need to reposition the cursor to remain within the vessel.*

Auto Optimize



To activate **AUTO** in B, Color Flow, or Doppler Modes, press **Auto Optimize**.

You can also activate **AUTO** via the **AUTO** softkey in B Mode and in Doppler Mode.

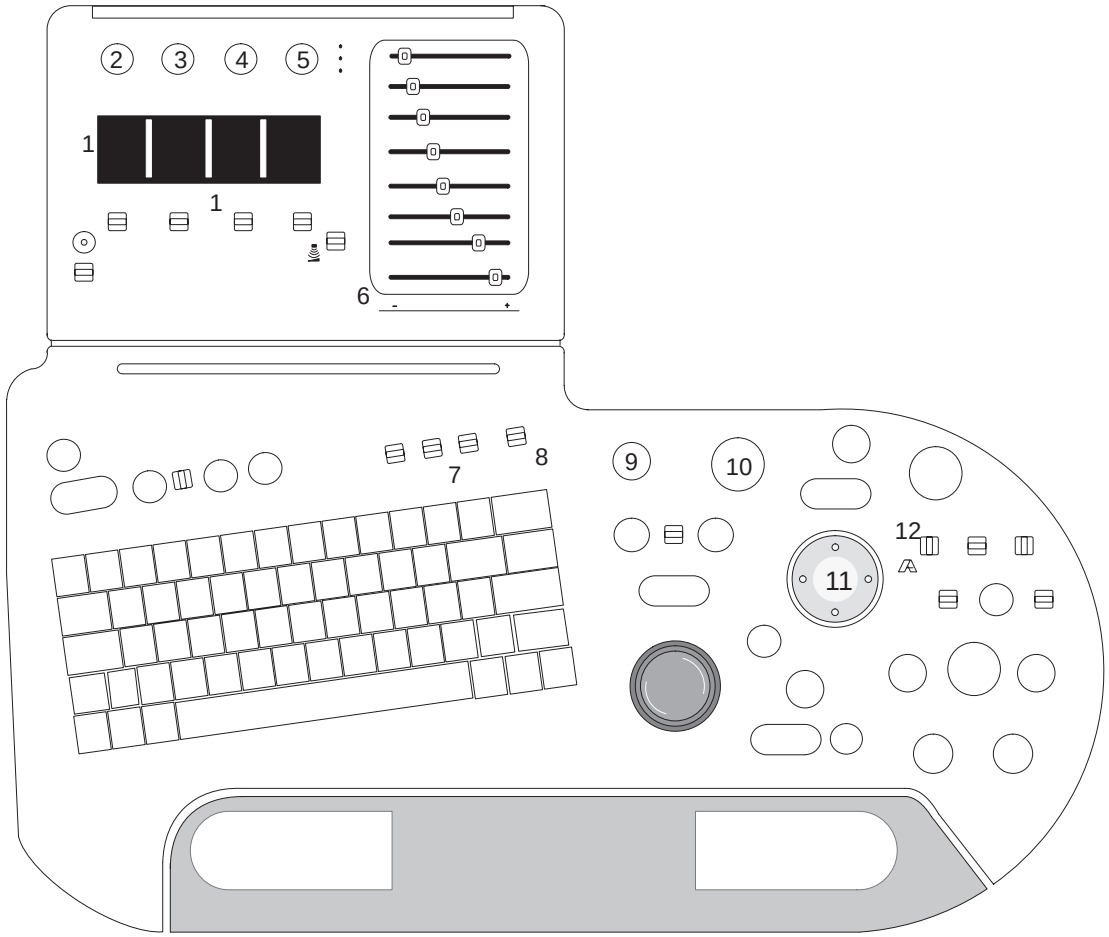
Optimizing AUTO B Mode to a selected ROI/Anatomy

To optimize the image based on a selected ROI in B Mode,

1. Click **Previous/Next** to move to the second B Mode SoftMenu. Click the **AUTO ROI** softkey downward. An ROI box is displayed on the image and **CREATE** appears on the SoftMenu in place of **ROI**.
2. Position and size the AUTO ROI over the part of the image you want to use to optimize the image. Size the ROI by adjusting the **ROI Size** rocker switch. Position the ROI by moving the **Trackball**.

   You may find that you can skip this step and simply accept the default ROI position, which uses the majority of the image data.
3. After you have positioned and sized the ROI, click the **AUTO CREATE** softkey downward and press **Set**.

B Mode Controls



1. Softkey Displays and Controls:

UP/DOWN LT/RT	B EDGE ENHCE 0	B FR/RES FRM RT	B DYN RANGE 54	
CE ON	FRAME AVG 3	ON/OFF AUTO RAOI	SELECT MAP A	+ **Previous/ Next**
VIDEO INVERT OFF	SMOOTH FILTER 0	MEDIAN FILTER OFF	B/M TINT MAP OFF	+ **[Code A]**
UP/DOWN LT/RT	ON/OFF AUTO RAOI	B FR/RES FRM RT	B FLOW BCKGRND ON	+ **B Flow**

2. B Flow (8.0 EXPERT and Update)
3. Auto 3DView
4. Coded Harmonics (8.0 EXPERT and Update)
5. Multi Frequency and Harmonic Imaging (6.5 + 8.0 PRO Series)
6. TGC
7. Focus: Number and Position
8. Depth
9. Auto Optimize
10. Gain
11. ROI Size
12. Angle Steer

B Mode Controls

Image Quality

Acoustic Output

1

Optimizes image quality and allows user to reduce beam intensity.

To increase/decrease,

1. Click up/down.

WARNING

Read descriptions for each control you intend to use before adjusting Acoustic Output or any control that affects Acoustic Output.

Acoustic Output Hazard

Use the minimum output to get the best diagnostic image or measurement during an exam.

Display

Values greater than 0.1 are displayed.

Mechanical Index (MI)

Mechanical effects (cavitation) on biological tissue produced by acoustic beam.

Soft Tissue (TIS)

Thermal effects on soft tissue.

Thermal Index Bone (TIB)

Thermal effects on tissue with ossified bone near the focal point of the beam.

Cranial (TIC)

Thermal effects on bone located near the surface, such as the cranium.

To change display,

Code + X

1. Press **[Code X]**.
2. Click softkey up/down.

Coded Harmonics

2&3

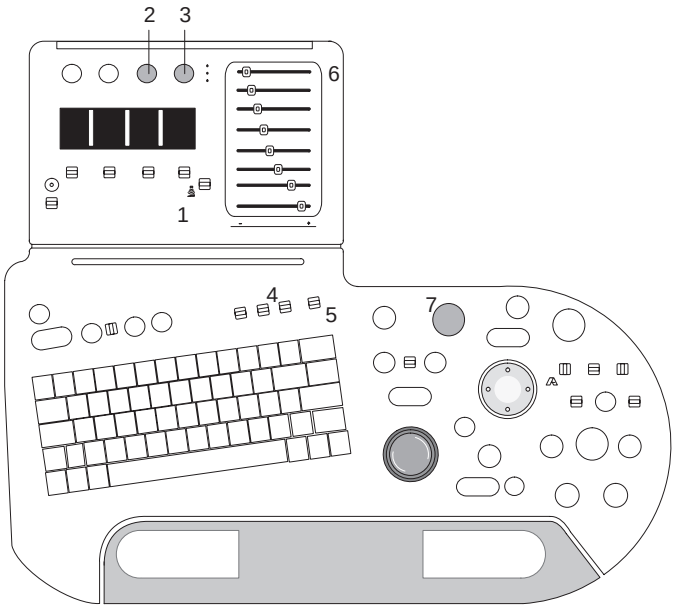
Coded Harmonics imaging utilizes Digitally Encoded Ultrasound (DEU) to enhance near field resolution for improved small parts imaging as well as far field penetration.

1. Press **Harmonics** (Release 8.0 EXPERT and Update)

Multi Frequency optimizes the probe's capabilities at multiple frequencies to image different patient types.

1. Press **Multi Freq**.
2. Click appropriate ___ **FREQ** softkey.

Tissue Harmonic Imaging frequencies are preceded by a '**T**' (Release 6.5 and 8.0 PRO).



Focus Number & Position

4

Optimizes image by increasing resolution for a specific area.

>>

>

Focus Number (B Mode)

Click up to increase; click down to decrease.

Focus Position

Click up to move focal zone to near field; click down to move focal zone to far field.

Depth

5

6 cm

14 cm

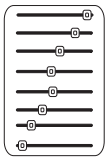
Adjusts field of view to image deeper structures or structures near the skin line.

TGC

6

Near Field

Far Field



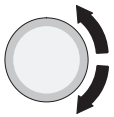
< >

Balances the image so brightness is consistent throughout image.

To decrease/increase, move slide pot to left/ right.

Gain

7 Changes overall image brightness.



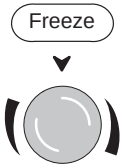
To increase/decrease, turn dial right/left.

Changing M Mode Gain does not affect B Mode image gain.

Activating CINE/CINE Timeline

1

Useful for viewing short segments of an image/timeline.



1. Press **Freeze**.
2. **Trackball** to activate CINE.
3. **Trackball** left (backward) or right (forward) to manually move through CINE memory.
   –OR–
   Press **ROI Size** right/left to step forward/backward through CINE memory.

The CINE Timeline gauge shows your location in CINE memory. A B Mode CINE frame counter appears in the upper right-hand corner of the display.

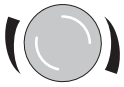
CINE Loop

Automatic review of CINE segment.

To activate CINE Loop,

1. Click **BEGIN LOOP REVIEW**.

Not available for CINE Timeline.



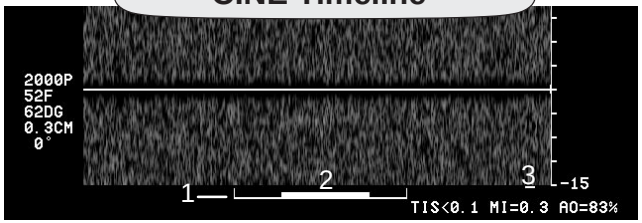
To edit CINE Loop,

1. **Trackball** to desired start position. Click **EDIT LEFT**.
2. **Trackball** to desired end position. Click **EDIT RIGHT**.

To stop CINE Loop, move the **Trackball**.

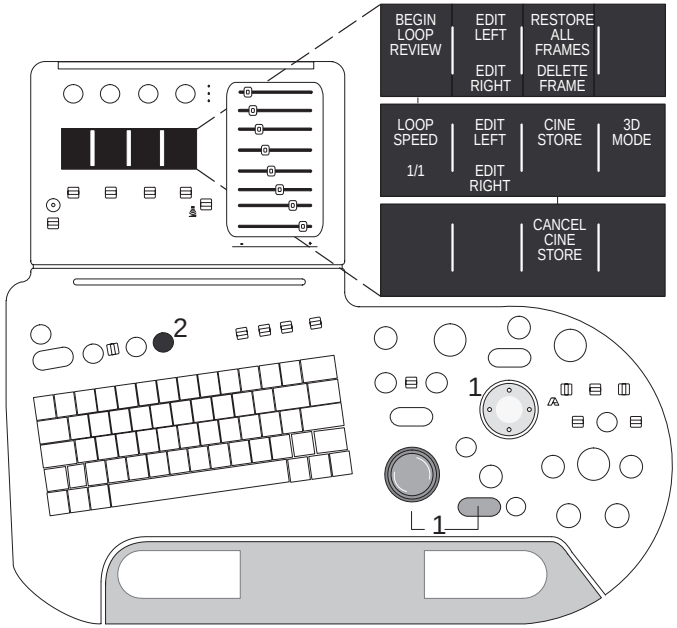
To exit CINE Loop. press **Freeze**.

CINE Timeline



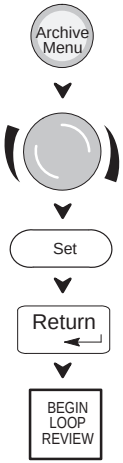
1. **CINE Gauge**. CINE Timeline memory window.
2. **Timeline Icon**. Indicates current window of timeline information, in proportion to entire memory.
3. **Frame Indicator**. Indicates position of B Mode image frame for this group of timeline vectors.

To activate B Mode CINE/CINE Timeline only, click **B-MODE CINE** or **TMLINE CINE** softkey.



CINE Store

2



To store a CINE Loop or 3DView, click **CINE STORE**.

To cancel a CINE store, click **CANCEL CINE STORE**.

To review the archived CINE Loop,

1. Press **Archive Menu**.
2. **Trackball** to CINE Loop segment.
3. Press **Set** to select.
4. Press **Return**.
5. Click **BEGIN LOOP REVIEW**.

Post Processing

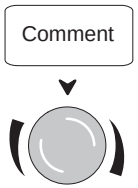
Available post processing controls:

VIDEO INVERT. Images black on white.
COLOR MAP. Cycles through color maps.
COLOR TAG. Tags velocity range.
B-Color. Activates B-Color.
Maps Gray. Selects gray map.
Zoom. Zooms region of interest.
Angle Correct. Adjusts Doppler angle.
Baseline. Adjusts Color Flow baseline.
Invert. Inverts color map.
CF. Removes color from Color Flow image.
Auto Optimizes. Optimizes image/spectrum.

Comment

Annotating

The annotation keyboard is always active. Begin typing. Press the ←, →, ↑, ↓ keys to point out a part of the anatomy.



To reposition annotation cursor,

1. Press **Comment**.
2. **Trackball** to move cursor.
3. Begin typing.

To revise existing text,

1. Press **Comment**.
2. **Trackball** to where you want to add/ change information.
3. Typeover existing text or press **Word Del**.

To delete previous character, press **Backspace**. To delete a word, press **Word Del**.

To delete all comments,

Shift + Delete All Backspace

Press and hold down the **Shift** and **Delete All** keys.

Measurements and calculations are also deleted from the display.

To move comment cursor to home position, press **Home**.

To specify a new home position,

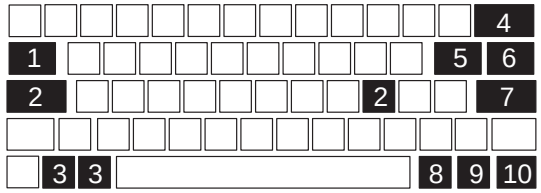
1. Press **Comment**.
2. **Trackball** to where you want the new home position to be.
3. Press and hold down the **Shift** and **Set Home** keys.

International Characters

To type an international character,

1. Press the **Option** key (marked on the keyboard as a triangle) plus a combination of keystrokes, shown below:

ã, õ, ñ . . . . . △ + n + a,o,n
á, é, í, ó, ú . . . △ + e + a,e,i,o,u
â, ê, î, ô, û . . . △ + i + a,e,i,o,u
ä, ë, ï, ö, ü . . . △ + u + a,e,i,o,u
à, è, ì, ò. ù . . . △ + ; + a,e,i,o,u
å . . . . . △ + a
ø . . . . . △ + o
ç . . . . . △ + c
ß . . . . . △ + s
æ . . . . . △ + ’
G, S, I . . . . . △ +G, D, P
Russian . . . . . △
Greek . . . . . △



1. Exit.
2. Comment Library **[Code L]**.
3. Arrow keys.
4. Delete All/Backspace.
5. Word Tab/Word Delete.
6. Set Home/Home.
7. Return key.
8. Option key (△).
9. Body Pattern.
10. Comment key.

Body Patterns

Adds body pattern to the display.

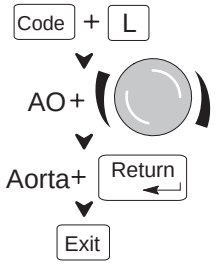
To activate,

1. Press **Body Pattern**.
2. Click desired body pattern softkey.
3. **Trackball** to position probe marker. Click **Angle Correct** to rotate probe marker.
4. Press **Set**.

To deactivate, press **Body Pattern**.

Library

Stores 23 annotation scripts.



1. Press **[Code L]**.
2. Type the code (up to 4 characters). **Trackball** to TEXT column.
3. Type the script. Press **Return**.
4. Press **Exit** when you are done.

Using Library Scripts

Recalls script to the display.

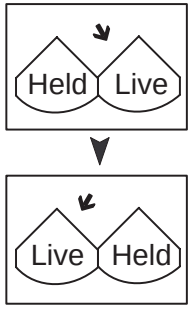
1. Type the code.
2. Press **Set**.

Different Images

1

Use Multi Image with Code Z Off to:

- View anatomy larger than the probe's field of view or footprint
- Get 2 shots on one photo
- Compare 2 different scan planes



To activate Multi Image,

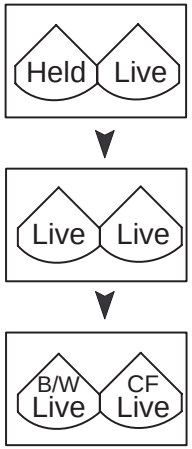
1. Press **Multi Image**. *Any control changes only affects the live image.*

To select the other image,

1. Press **Image Select**. *Control settings transfer to newly selected image.*

Identical Images

2



Use Multi Image with Code Z On to:

- Get 2 live images
- Apply color

To activate Multi Image,

1. Press **Multi Image**.
2. Press **[Code Z]** and click **SIMUL** softkey to **ON**.
3. Press **CF** to activate color flow.

*Most controls affect both images, except **CF** and color flow controls.*

CINE

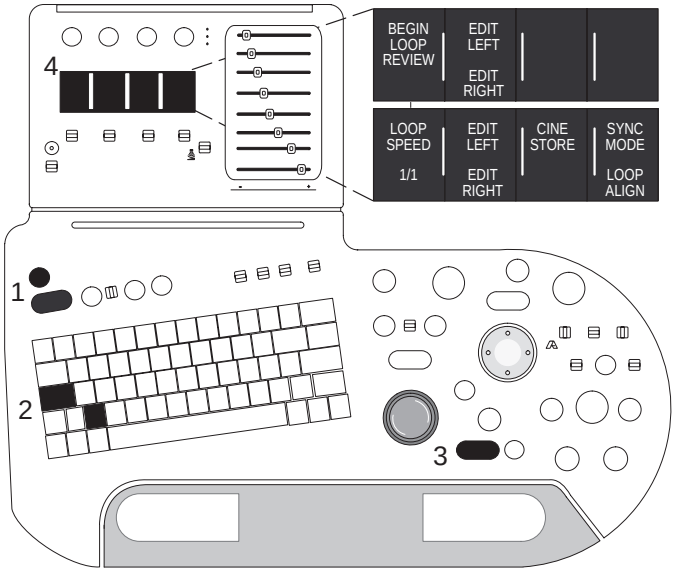
3

You can create identical (Code Z On) or different (Code Z Off) CINE loops.

To activate CINE in Multi Image, press **Freeze**. Move the **Trackball**.

To activate CINE Loop, click **BEGIN LOOP REVIEW**.

3DView is not available in Multi Image.



Multiple CINE Loops

To create multiple CINE Loops,

1. Set **[Code Z]** to **OFF**. Press **Freeze**.
2. Move the **Trackball**.
3. Click **BEGIN LOOP REVIEW**.
4. Press **Image Select**.
5. Move the **Trackball**.
6. Click **BEGIN LOOP REVIEW**.

Aligning CINE Loops

4

To align multiple CINE Loops,

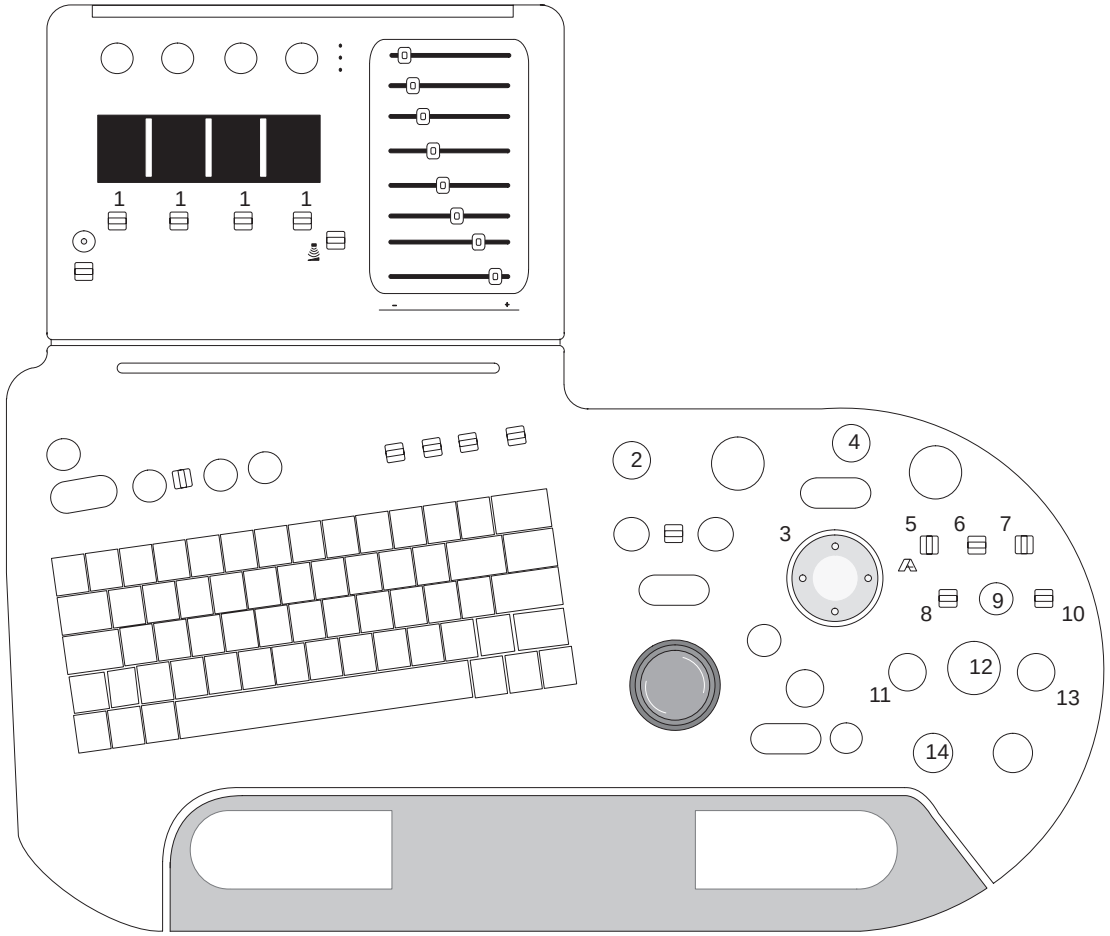
1. Click **SYNC MODE** to select type of synchronization:
   - **LOOP START**. Aligns both loops to start at same time. Shorter loop stops until longer loop ready to start again.
   - **LOOP ALIGN**. Aligns both loops to start and end at same time.

CINE Store

To store a CINE Loop, click **CINE STORE**.

Color Flow/PDI Mode Controls

Color Flow/PDI Controls



1. Softkey Displays and Controls:

UP/DOWN LT/RT	WALL FILTER 13 Hz	COLOR MAP V–0	CF FR/RES FR RATE

+ Next

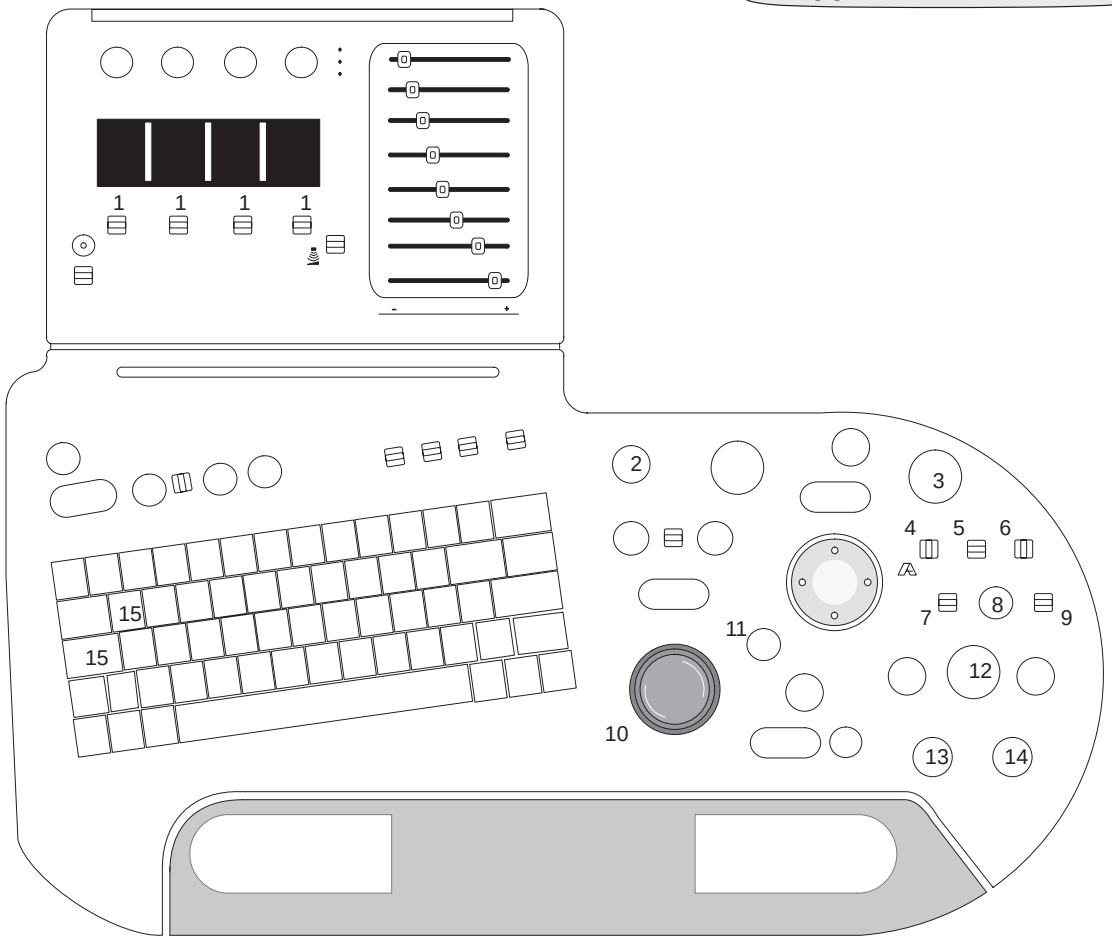
PACKET SIZE 10	FILTER MODE ACE	FRAME AVG OFF	COLOR THRES 66%

+ [Code A]

COLOR TAG OFF	COLOR TAG SIZE	COLOR TAG POS	

2. Auto Optimize
3. ROI Size
4. M Mode
5. Angle Steer
6. SV Gate
7. Angle Correct
8. Baseline
9. Invert
10. Velocity Scale
11. CF (Color Flow)
12. Doppler Gain and Auto Angle
13. PDI
14. PW

Doppler Mode Controls



1. Softkey Displays and Controls:

UP/DOWN LT/RT	WALL FILTER 78 Hz	SWEEP SPEED MEDIUM	DOPPLER DYN RANGE 32	**+ Previous/Next**
	DOPPLER DYN RANGE	QUICK ANGLE CORRECT	SELECT TRACE ABOVE	**+ Previous/Next**
DOP TINT MAP OFF	SPECTRL AVG OFF		VIDEO INVERT OFF	**+ Previous/Next**
TRIPLEX CONTROL PW	VSCALE RATIO 1/2	QUICK ANGLE CORRECT	SELECT TRACE ABOVE	

2. Auto Optimize
3. Volume
4. Angle Steer
5. SV Gate (Size)
6. Angle Correct
7. Baseline
8. Invert
9. Velocity Scale
10. Trackball (SV Gate Position)
11. Cursor
12. Doppler Gain
13. PW
14. Update
15. Spectral Trace

Doppler/Color Flow Mode Controls

Power Doppler Imaging

1

Power Doppler Imaging (PDI) is a color flow mapping technique used to map the strength of the Doppler signal coming from the tissue rather than the frequency shift of the signal.

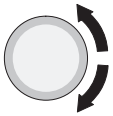
To activate/deactivate, press **PDI**.

Click **COLOR MAP** to cycle through power and topographic maps.

Volume

2

Controls Doppler Audio output.



To increase/decrease, turn dial right/left.

Cursor

3

Displays Doppler Cursor on B Mode image or in Update, toggles between B Mode or Color Flow controls and Doppler Controls.

1. Press **Update**.
2. Press **Cursor** to toggle between Doppler and B Mode or Color Flow controls.

Angle Steer

4

Slants the linear image left/right to get more information without moving the probe.

Click left/right

Angle Correct

5

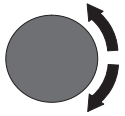
Adjusts Doppler angle to correct the velocity scale.

To adjust angle, click left/right. Or press Auto Angle Correct. Or adjust QUICK ANGLE CORRECT softkey.

Doppler Gain

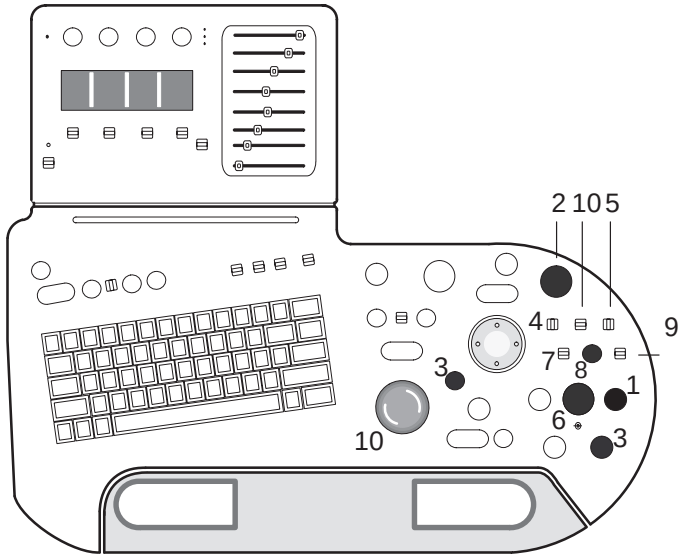
6

Amplifies received Doppler signals and Color Doppler inside color window. Also Auto Angle Correct.



To increase/decrease, turn dial right/left.

Press down to auto angle. Rotate dial to adjust auto angle.



Baseline

7

Positions Doppler spectrum and Color bar baseline.

Click up/down.

Invert

8

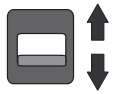
Flips Doppler spectrum; inverts color flow.

Press **Invert**.

Velocity Scale

9

Adjusts velocity scale to accommodate faster/slower blood flow velocities.

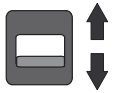


To increase/decrease, click up/down.

SV Gate Size & Position

10

Controls Doppler sample area size.



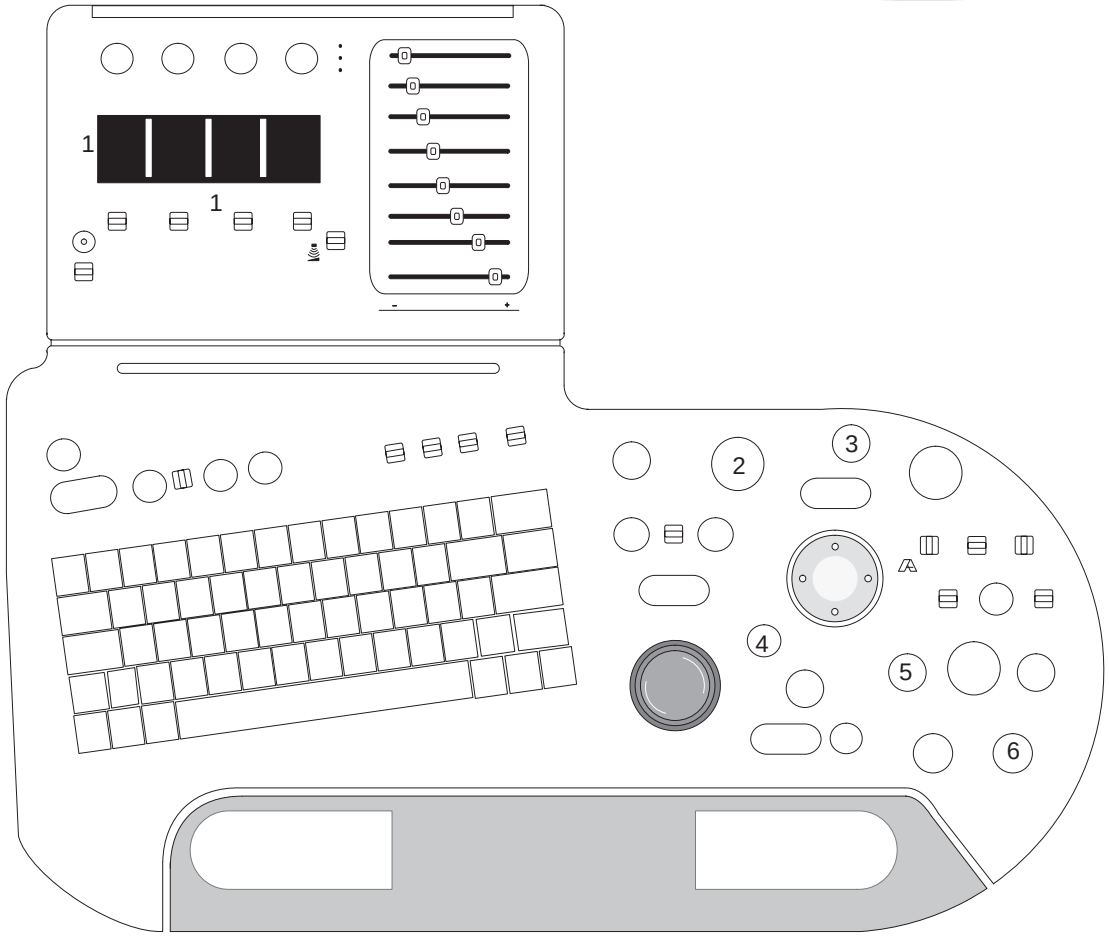
Sample Volume Gate Size

Click up to increase; down to decrease.

Sample Volume Gate Position

Trackball left/right to position Mode Cursor. Trackball up/down to position over vessel.

M Mode Controls



1. Softkey Displays and Controls:

UP/DOWN LT/RT	M EDGE ENHCE 0		M DYN RANGE 60	
		SWEEP SPEED MEDIUM	VIDEO INVERT OFF	**+ [Code A]**
UP/DOWN LT/RT	WALL FILTER 1.0 cm/s	COLOR MAP V–0	SWEEP SPEED MEDIUM	**M Color Flow**
PACKET SIZE 10	FILTER MODE ACE	FRAME AVG OFF	COLOR THRES 66%	**+ Next**
COLOR TAG OFF	COLOR TAG SIZE	COLOR TAG POS		**+ [Code A]**

2. Gain
3. M Mode
4. Cursor
5. Color Flow
6. Update

Basic Measurements

Distance & Circumference

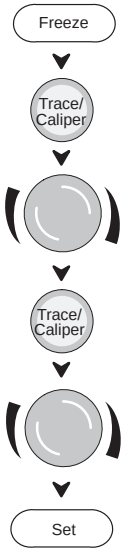
1

Trace: Used to measure:

- **Circumference**
- **Area**
- **% Stenosis**

Caliper: Used to measure:

- **Distance**
- **Time**
- **Depth**
- **Slope**
- **Velocity**



To trace an area of interest,

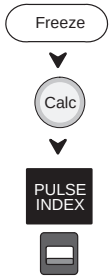
1. Press **Freeze**. Press **Trace**.
2. **Trackball** to position the first cursor. Press **Trace** again.
3. **Trackball** around the anatomy you want to trace.
4. Press **Set** to complete the measurement or let the trace auto complete.

To measure distance...

1. Press **Freeze**. Press **Caliper**.
2. **Trackball** to position the first cursor. Press **Caliper** again.
3. **Trackball** to position the second cursor.
4. Press **Set** to complete the measurement.

Taking a Measurement

To be prompted through a calculation,

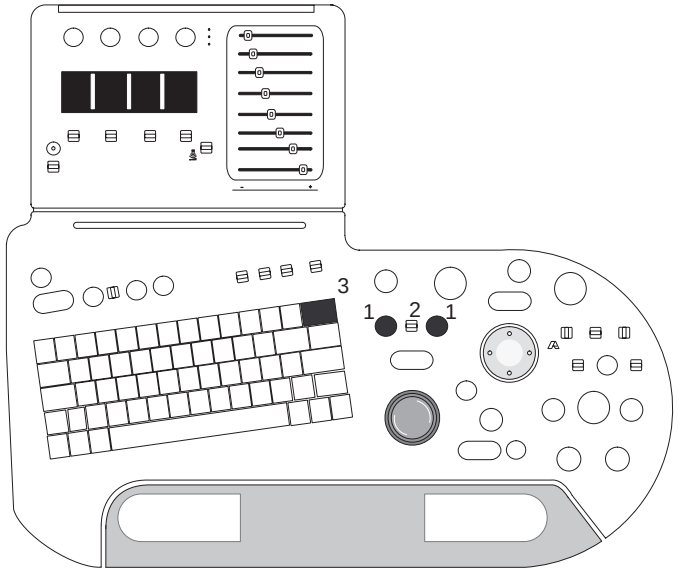


1. Press **Freeze**. Press **Calc**.
2. Click the calculation softkey.
3. Make required measurements.

To assign measurements to a calculation,

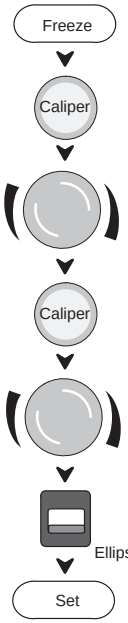
1. Press **Freeze**. Press **Calc**.
2. Make required measurements.
3. Click the appropriate softkey.

The calculation appears on the display and on the exam's worksheet.



Circumference & Area

2



Ellipse: Used to measure circumference and area.

1. Press **Freeze**. Press **Caliper**.
2. **Trackball** to position the first cursor. Press **Caliper** again.
3. **Trackball** to position the second cursor. Click **Ellipse**.
   a. **Trackball** to translate ellipse around fixed cursor.
   b. Click **Ellipse** to size the ellipse.
   c. Press **Caliper** to toggle between fixed and active cursor.
4. Press **Set** to complete the measurement.

Editing Measurements

3

To erase the last part of the active trace, press **Backspace**.

To remove an active caliper, press **Backspace**.

To delete all measurements and annotations from the display (but not from the worksheet), press and hold down **Shift** and **Delete All**.

Starting an OB Exam

1

New Pt

Y + Return

OB/GYN

To start an OB/GYN exam,

1. Press **New Pt**.
2. Type a **Y** to verify that this is a new patient. Press **Return**.
3. **Trackball** to select the OB/GYN exam. Press **Set**.

Type the following information (press **Return** after each entry),

PATIENT NAME	Patient's name.
PT ID	Patient's identifying number.
OPERATOR ID	Your initials.
DOB	Woman's date of birth.
(G)RAVIDA	Number of pregnancies.
(P)ARA	Number of births.
(A)BORTION	Number of abortions.
(E)CTOPIC	Number of ectopic pregnancies.
GA or EDD	Type LMP, gestational age, or estimated date of delivery.
# OF FETUSES	Number of fetuses.
HISTORY	Patient's history.
REFERRING MD	Name of the referring physician. Press **EXIT**. Select application.
PAST EXAM DATA	Type a '**Y**' to enter past exam data for the fetus(es).

DICOM Note: Press **ROI Size**. **Trackball** to patient name on the Worklist menu. Press **Set** to select. Patient data is transferred to the New Patient menu.

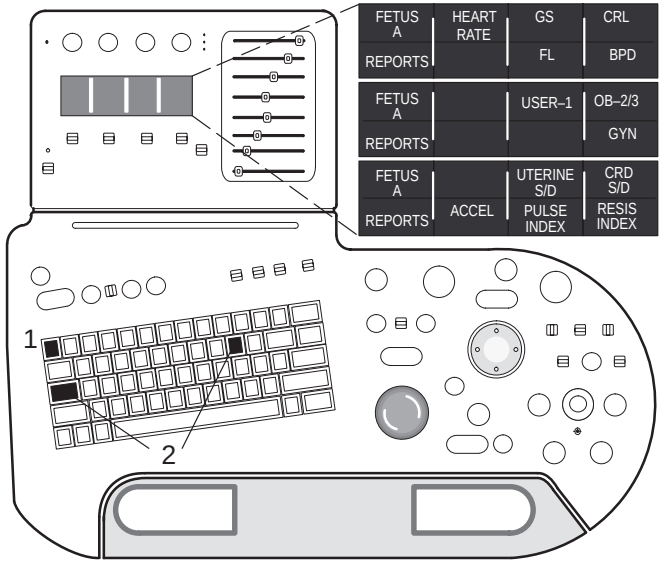
OB Presets

2

1. Press **[Code P]**, Page 1 of 6.
2. **Trackball** to **OB Calc Pkg Type**. Select **US**, **Tokyo** (Japan), or **Osaka** (Japan).
3. **Trackball** to **CUA Method (Hadlock)**. Select Average or Regression (Hadlock BPD, FL, HC, AC only).
4. **Trackball** to **Heart Rate Method – Manual**. Select to calculate heart rate over 2 or 3 beats.

OB–2/3 Report SoftMenu (US)

FETAL COMP2		OB DOPPLER	GRAPHS
FETAL COMP 1	SUMMARY	ANATOMY	BIO–METRY



OB–1 Calculation SoftMenus (US)

FETUS A	HEART RATE	GS	CRL
REPORTS		FL	BPD
FETUS A		USER–1	OB–2/3
REPORTS			GYN
FETUS A		UTERINE S/D	CRD S/D
REPORTS	ACCEL	PULSE INDEX	RESIS INDEX

OB–2/3 Calculation SoftMenus (US)

FETUS A	HEART RATE	AC	HC
REPORTS	AFI	FL	BPD
FETUS A	USER 2	UTERINE S/D	CRD S/D
REPORTS	OB–1	PULSE INDEX	RESIS INDEX
FETUS A	USER 3	USER 4	USER 5
REPORTS	USER 6	USER 7	USER 8

OB SoftMenus (Tokyo)

FETUS A	GS	BPD	AFI
REPORTS	CRL	FL	APTD xTTD
FETUS A		GYN	LV
REPORTS	AC		
FETUS A	HEART RATE	UTERINE S/D	CRD S/D
REPORTS	ACCEL	PULSE INDEX	RESIS INDEX

OB SoftMenus (Osaka)

FETUS A	FTA	BPD	AFI
REPORTS	CRL	FL	HL
FETUS A	HEART RATE	UTERINE S/D	CRD S/D
REPORTS	ACCEL	PULSE INDEX	RESIS INDEX
FETUS A		GYN	
REPORTS			

Exam Reports

Biometry Worksheet	Displays measurements, gestational age, growth percentile, source
Anatomy Worksheet	Indicates imaged anatomy.
Summary Report	Displays pertinent exam information.
Multiple Gestation	Displays each fetus's exam information.
Past Exam Data	Lets users enter past exam data (via New Patient Menu).
OB Graphs	Displays OB Growth Charts
OB Doppler Report	OB automatic vascular calculation worksheet

Gestational Sac

Use the prompted method to take three distance measurements in two different scan planes to measure the gestational sac, **if you choose to do this measurement without using Multi Image**.

1. Click the **GS** softkey. The first caliper appears.
2. Take the first distance measurement:
   a. **Trackball** to position caliper. Press **Caliper**.
   b. **Trackball** to position caliper. Press **Set**. The second caliper appears.
3. Take the second distance measurement:
   a. **Trackball** to position caliper. Press **Caliper**.
   b. **Trackball** to position caliper. Press **Set**. The third caliper appears. Press **Freeze** to unfreeze the image. Change the scan plane. Press **Freeze**.
4. Take the third distance measurement:
   a. **Trackball** to position caliper. Press **Caliper**.
   b. **Trackball** to position caliper. Press **Set**.
5. The measurement and its resultant estimated fetal age are recorded onto the display and Biometry Worksheet.

CINE GS Measurement

If you use CINE to measure the **GS** after obtaining images in two scan planes, take three distance measurements, then click **GS**. Use **ROI Size** to move through CINE.

DO NOT exit calculations while taking measurements in CINE. If you do exit via the **CALC** key, the measurements are deleted.

Multiple Gestation

Starting an Exam

1. Press **New Pt**.
2. Fill in exam information, including the **NUMBER OF FETUSES (1–4)**.

Moving to Next Fetus While Scanning

1. Click **FETUS X** softkey (where **X** indicates the letter of the fetus you want to scan).

Viewing OB Reports

1. Click the **REPORTS** softkey.
2. Then click the softkey corresponding to the report you want to view.

Moving to the Next Fetus's Worksheet

1. Press **ROI Size**.

Editing the Number of Fetuses During an Exam

1. Press **New Pt**.
2. Press **Return** to verify that this **IS NOT** a new exam.
3. **Trackball** to **NUMBER OF FETUSES (1–4)**. Type the number of fetuses.
4. If you decreased the number of fetuses, specify which fetus's data needs to be deleted by clicking the appropriate **DELETE FETAL DATA** softkey.
5. Press **New Pt** or **Exit** to return to scanning.

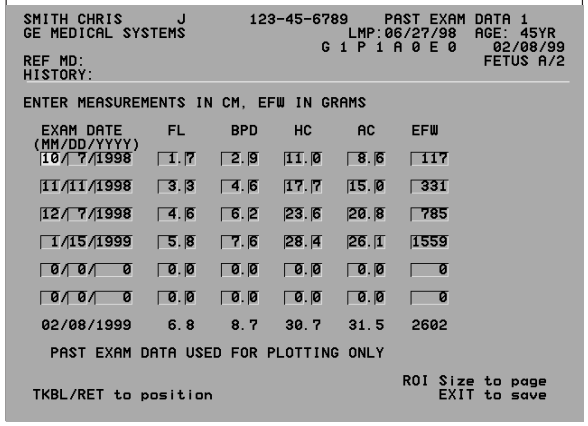
Past Exam Data 1

The Past Exam Data 1 menu is used to record the fetus's measurements from up to the past six exams.

- Femur length (FL),
- Biparietal diameter (BPD),
- Head circumference (HC),
- Abdominal circumference (AC), and
- Estimated fetal weight (EFW)

Calculations from today's exam are filled in on this menu automatically. To fill in the **PAST EXAM DATA 1** menu,

1. Type the exam's date.
2. Type the exam's **FL**. Type in the rest of the measurements. You do not need to enter the decimal point.
3. Press **ROI Size** to move to the **PAST EXAM DATA 2** menu or to the next fetus's **PAST EXAM DATA 1** menu.


SMITH CHRIS J 123-45-6789 PAST EXAM DATA 1
GE MEDICAL SYSTEMS LMP:06/27/98 AGE: 45YR
G 1 P 1 A 0 E 0 02/08/99
REF MD: FETUS A/2
HISTORY:
ENTER MEASUREMENTS IN CM, EFW IN GRAMS
EXAM DATE (MM/DD/YYYY) FL BPD HC AC EFW
10/ 7/1998 1.7 2.9 11.0 8.6 117
11/11/1998 3.3 4.6 17.7 15.0 331
12/ 7/1998 4.6 6.2 23.6 20.8 785
1/15/1999 5.8 7.6 28.4 26.1 1559
0/ 0/ 0 0.0 0.0 0.0 0.0 0
0/ 0/ 0 0.0 0.0 0.0 0.0 0
02/08/1999 6.8 8.7 30.7 31.5 2602
PAST EXAM DATA USED FOR PLOTTING ONLY
TKBL/RET to position
ROI Size to page
EXIT to save

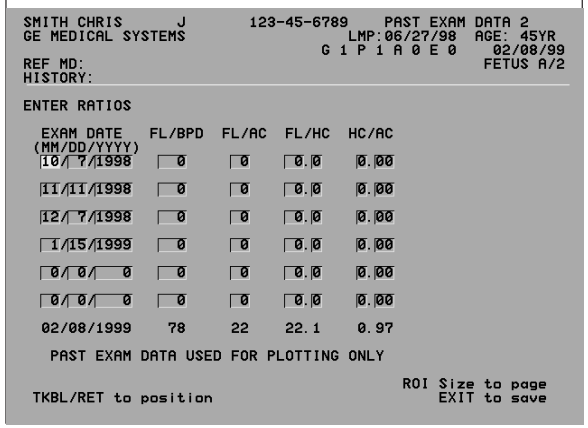
Past Exam Data 2

The Past Exam Data 1 menu is used to record the fetus's measurements from up to the past six exams.

- FL/BPD
- FL/AC
- FL/HC, and
- HC/AC

Calculations from today's exam are filled in on this menu automatically. To fill in the **PAST EXAM DATA 2** menu,

1. Type the exam's date.
2. Type the exam's **FL/BPD**. Type in the rest of the ratios. You do not need to enter the decimal point.
3. Press **ROI Size** to move to the next fetus's **PAST EXAM DATA 1** menu or press **Exit** to save and exit the New Patient Menu and return to scanning.

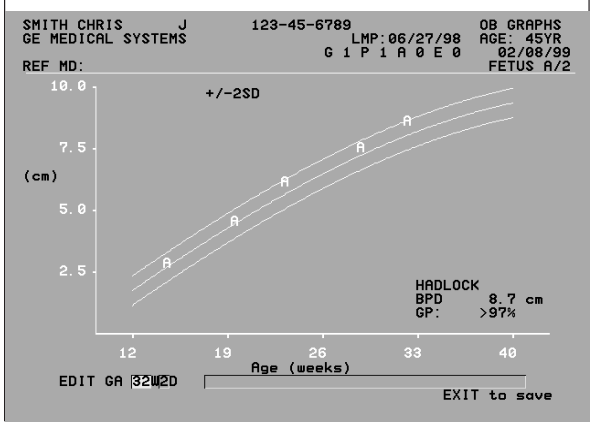

SMITH CHRIS J 123-45-6789 PAST EXAM DATA 2
GE MEDICAL SYSTEMS LMP:06/27/98 AGE: 45YR
G 1 P 1 A 0 E 0 02/08/99
REF MD: FETUS A/2
HISTORY:
ENTER RATIOS
EXAM DATE (MM/DD/YYYY) FL/BPD FL/AC FL/HC HC/AC
10/ 7/1998 0 0 0.0 0.00
11/11/1998 0 0 0.0 0.00
12/ 7/1998 0 0 0.0 0.00
1/15/1999 0 0 0.0 0.00
0/ 0/ 0 0 0 0.0 0.00
0/ 0/ 0 0 0 0.0 0.00
02/08/1999 78 22 22.1 0.97
PAST EXAM DATA USED FOR PLOTTING ONLY
TKBL/RET to position
ROI Size to page
EXIT to save

Fetal Trending

Fetal Trending Growth Graphs are produced for each fetus, providing you use the specified authors' calculations (Hadlock, Merz, Jeanty, Williams, or Brenner). Data for these graphs is taken from the current exam as well as from the data entered on the **PAST EXAM DATA 1/2** menus. To view OB Graphs,

1. Click the **REPORTS** softkey, click the **GRAPHS** softkey, then click the softkey corresponding to the report you want to view. Click **Previous/Next** to move to the ratio OB graphs. To move to the next fetus's data, press **ROI Size**.
2. If required, type a new age gestational age in the **EDIT GA** field.

The **OB GRAPH** plots current and previous exam calculation measurements on the growth curve and gives a growth percentile (**GP**). The fetus's age (in weeks) is charted along the **x** axis; the calculation's measurement (in cm or g) is charted along the **y** axis.



Vascular Exam

Vascular Exam Presets

To select % Stenosis preset,

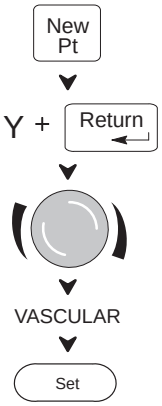
1. Press **[Code P]**, Page 1 of 6.
2. **Trackball** to **% Stenosis Method**. Select **Area** or **Diameter**.
3. **Trackball** to **RI Calc Method–Auto**. Select **PS** or **ED**.

Manual Vascular Calcs

Manual Vascular Calcs require you to manually take measurements which will be assigned to the Manual Carotid Summary Report.

Calculations assigned to the Manual Carotid Summary Report do not appear on the Auto Vascular Calcs Carotid Summary Reports and vice versa.

New Vascular Exam



To start a vascular exam,

1. Press **New Pt**.
2. Type a **Y** to verify that this is a new patient. Press **Return**.
3. **Trackball** to select the vascular exam. Press **Set**.

Auto Vascular Calcs

Auto Vascular Calcs enable the LOGIQ™ 700 to detect and identify a cardiac cycle and allows the user to assign measurements and calculations during live timeline imaging or while the image is frozen or in CINE. Peak values are detected for venous flow. A Volume Flow measurement is also available to measure the rate of flow of a vessel in units of ml/min.

Auto Vascular Calcs Presets

To activate Auto Vascular Calcs, press **Spect Trace** (**[Code Q]**). Click the **AUTO VASC CALCS** softkey to **LIVE** or **FROZEN**.

To set up vessel names on the application Vessels Setup menus, press **Spect Trace** (**[Code Q]**). Click **SPECIFY VESSEL NAMES**. The application's Vessels Setup Menu appears. **Trackball** to the first available space and type the vessel. Press **Exit**. The vessel(s) now appear on the exam's SoftMenu. The assigned calculations to this vessel display, but do not appear on the report pages.

To select the calculations to be displayed in a continuously scrolling window in Auto Vascular Calcs, press **Freeze**. Click **Previous/Next** until you reach **SELECT VASC CALC**. Select the calculations you want to display by clicking the calculation's softkey. Save these as your default calculations by clicking the **SAVE AS DEFAULT** softkey. Verify or cancel your selection by clicking **SAVE YES/NO**. To return to the exam, click the **ASSIGN VESSEL** softkey.

SELECT TRACE on the Auto Vascular Calcs SoftMenu lets you indicate whether cardiac cycle detection, and therefore cardiac cycle identification, should use peak timeline data above, below, or above and below (composite) the baseline.

Auto Vascular Calcs Exam

To select a different cardiac cycle, press **Freeze**. Press **Caliper**. You must select the start or peak caliper to select a different cycle. Use the **Trackball** to move to the desired cardiac cycle. Press **Set**. *You need a couple of good cycles in front ot the new cardiac cycle for this to be successful. Oftentimes this is problematic near a freeze bar.* Or, you can move through CINE memory with the **Trackball** until the desired cardiac cycle is selected by the system.

To edit a caliper identifier, press **Freeze**. Press **Caliper**. To move to the next crosshair identifier, press **Caliper** again. Reposition the identifier using the **Trackball**. Press **Set**. *Use the Caliper key to cycle through identifiers. Use the **Trackball** to move the active identifier. Use the **Trace** key to retrace the cycle. Press **Set** to complete the edit.*

To assign the selected auto vascular calcs to a vessel, click **Previous/Next** until you reach the SoftMenu with the desired vessel. Click the system/user vessel softkey. The system vessel is transferred to the worksheet.

Archiving an Image

To record image(s) onto the hard disk or MOD,

1. Press **Freeze**.
2. Press **Home** or **Set Home** to label the archived image. Type the text to identify this patient's archived image (up to seven (7) characters).
3. Press **P1/2** or **SP1/2** to archive the image. The system momentarily transfers the current image to the hard disk or MOD.

Copying an Image

To copy image(s) between the hard disk and MOD,

1. **Trackball** to highlight the image to be copied. Press **Set** to select the image
2. **Trackball** to the **COPY IMAGES** box. Press **Set**. Images being copied are prefixed by a negative sign (–).

DO NOT *turn off the system while the system is copying or deleting archive images. Depending on the number of images, this could take up to six minutes.*

Images on the MOD are prefixed by a plus sign (+).

Queuing an Image to Print

To queue an image to print from the MOD to the DEFF print queue device,

1. **Trackball** to highlight the image to be queued for print. Press **Set**. An asterisk appears in front of the tagged image.
2. **Trackball** to the **PRINT QUEUE** box.
3. Press **Set**.

A 'p' appears in the SZ column to indicate this image is queued to print.

Deleting an Image

To delete an image(s),

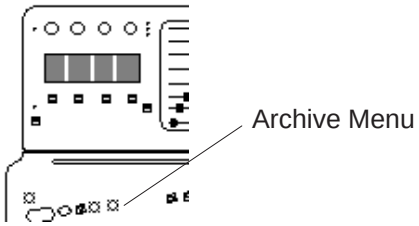
1. **Trackball** to highlight the image to be deleted. Press **Set**. An asterisk appears.
2. Click **DELETE IMAGES** softkey.
3. Verify the delete command by clicking **DELETE YES** or cancel delete command by clicking **DELETE NO**.

Formatting an MOD

1. Insert the MOD.
2. Press **Archive Menu**. The Archive Menu and SoftMenu appear.
3. Click **ARCHIVE FORMAT** softkey.
4. Verify format by clicking **FORMAT YES**.

To eject an MOD, press **Archive Menu**. The Archive Menu SoftMenu appears. Click **EJECT MOD** softkey.

Recalling an Image



To recall an image,

1. Press **Archive Menu**. The Archive Menu with a list of currently-stored images and the Archive SoftMenu appear.
2. **Trackball** to highlight the image to be viewed. Press **Set** to tag the image. An asterisk (*) appears next to the patient's name.
3. Trackball to **RECALL IMAGE** and press **Set**. The image appears on the screen. You can perform measurements, calculations (unless the archive does not match the current patient's), and annotations on an archived image.

To view multiple recalled images via slide show (no measurements can be performed),

1. **Trackball** to highlight the image to be viewed. Press **Set** to tag the image. Repeat until you have tagged all the images you wish to view.
2. **Trackball** to **RECALL IMAGE** and press **Set**.
3. Press **ROI Size** left/right to view the recalled images.

To return to scanning, press **Freeze**.

How to Use 3DView

Refer To: Image Optimize Chapter

CAUTION

This 3DView application is designed for qualitative information only and has no provision for any measurement or computation ability; also, no specific reconstruction resolution is provided or claimed for this option.

No position information is collected for source scans used for 3D reconstructions and distortion or skewing will be introduced if frames are not acquired at a uniform rate or spacing. Also, acquiring frames by rocking the probe may create additional distortion due to the use of non-parallel source images. Remember that the 3D images created are intended for subjective evaluation only, and may have distortion that is not obvious.

Auto 3DView

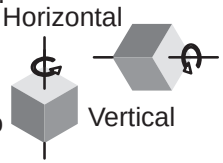
Press **Auto 3D** from a live image. The Auto 3DView Preset SoftMenu appears; the name of the last-selected user preset appears on the display along with the 3DView ROI, and the **Update** and **Freeze** keys blink. Click the desired 3DView preset. The preset SoftMenu disappears.

Position the 3DView ROI with the **Trackball** and size the 3DView ROI with **ROI Size**. Press **Update** (or the right foot pedal) to start acquiring new 3DView data. Perform a 2D scan of the anatomy. Press **Freeze** (or the left foot pedal) to render the 3DView.

The 3DView is automatically rendered. You may have to manually override the automatic Sweep Length setting determined by the system. You can override this rendered 3DView manually or by selecting a different user preset by clicking the **DISPLAY 2D** softkey. Then select **MANUAL 3D** or one of the other user preset softkeys.

Manual 3DView

1. Perform a 2D scan of the anatomy. Press **Freeze**. Move **Trackball**. Click **BEGIN LOOP REVIEW.**
2. Edit loop size using **EDIT LEFT/EDIT RIGHT** softkeys. Edit out extraneous frames using **DELETE FRAME** softkey. Click **Previous/Next** to access this SoftMenu.
3. Click **3D MODE** softkey. Use **ROI Size** to size and **Trackball** to position ROI.
4. Select the **RECON METHOD** for 3DView reconstruction.
   HI RES for high resolution.
   LO RES for low resolution.
   SHEAR for quick reconstruction.
   RESLICE quad cut plane rotate, rotational, cut plane, and rotational cut plane modes.
5. Select **SWEEP LENGTH** that represents the actual sweep length or set to **AUTO**.
6. Click **Previous/Next**. Select # **VIEWS** to be rendered, **1–18**.
7. Set how to **PROJECT** the image.
   MIN enhances dark objects in B Mode.
   RV/MIN inverts dark objects/white background.
   MAX enhances bright objects in B Mode.
   AVG Averages white/black objects.
   SURFACE enhances anatomy's surface edges.
   COLOR shows just color on black background.
   MIN COLOR enhances dark objects of anatomy.



RV/MIN COLOR inverts image
MAX COLOR enhances bright pixel intensities to gray scale image in surrounding tissue while showing the color in vessels.

8. Specify around which **AXIS** to rotate the 3DView: horizontal or vertical.
9. Select **RANGE**, 0/90, –45/45, 0/180, or 90/90.
10. Click **Previous/Next**. Specify whether you want the B Mode image displayed in the background of the 3DView via **3D BACKGND**. Specify the direction (**VIEW**). Specify the rotational resolution (**ROTATE RES**).
11. Click **RENDER 3D** softkey. This generates the 3DView. **Rendered image __ of __** displays while the 3DView is being created.

To adjust the criteria used to create the 3DView,

1. Click the **CANCEL 3D** softkey. Change the criteria, then click the **RENDER 3D** softkey again.

***DO NOT** turn the system off and back on while cancelling a 3DView. The 3DView starts at 1/3 the speed and may be adjusted. No measurements are allowed on the 3DView.*

To return to 2D imaging, Click **DISPLAY 2D**.

3DView Hints

Abdomen and Renal 3DView Recommended Settings

	Exam	Mode	RECON	PROJECT	AXIS	RANGE	VIEWS	SWEEP LENGTH
1.	Renal Mass	B Mode	HI RES	MIN	VERT	45/45	18	0.5–2.0cm
2.	Renal Vascularity	Color Flow	HI RES	MAX COLOR	VERT	45/45	18	0.5–2.0cm
3.	Hydro–nephrosis	B Mode	HI RES	MIN	VERT	45/45	18	0.5–4.0cm
4.	Liver Mass	B Mode	HI RES	MIN	VERT	45/45	18	0.5–5.0cm
5.	Hepatic Portal Veins	B Mode	HI RES	MIN	VERT	45/45 0/90	18	0.5–3.0cm
6.	Liver Vascularity	Color Flow	HI RES	MAX COL COL MIN	VERT	45/45 0/90	18	0.5–3.0cm
7.	Aorta	Color Flow	HI RES	MIN COL	HORZ	0/90	18	0.5–2.0cm

The numbered notes below apply to the number of the exam in the table above.

1. Obtain a sagittal and transverse image.
2. Use M12L or 739L probe for capsular flow with two focal zones. Use a symmetric velocity map (SVI).
3. Medial Filter and post processing B Maps may improve contrast resolution.
4. Delete frame with shadowing or bright echoes.
5. No comments.
6. Use two to three focal zones. Use a symmetric velocity map (SVI).
7. Higher frame averaging may be helpful.

Breast 3DView Recommended Settings

	Exam	Mode	RECON	PROJECT	AXIS	RANGE	VIEWS	SWEEP LENGTH
1.	Breast Tissue	B Mode	HI RES	MIN	VERT HORZ	45/45 0/90	18	0.5–2.5cm
2.	Ductal System	B Mode	HI RES	MIN	HORZ	45/45 0/90	18	0.5–1.0cm
3.	Breast Mass Cystic Type	B Mode	HI RES	MIN	VERT	45/45	18	0.5–4.0cm
4.	Breast Mass Solid Type	B Mode	HI RES LO RES	MIN MAX	VERT HORZ	45/45 0/90	18	0.5–4.0cm
5.	Lymph Nodes	B Mode	HI RES	MIN	VERT HORZ	45/45 0/90	18	0.5–1.5cm
		Color Flow	HI RES	MAX COL	VERT	0/90	18	0.5–1.5cm

The numbered notes below apply to the number of the exam in the table above.

1. Edit any images with shadowing.
2. Sweep through network of ducts.
3. Size ROI box to cystic structure. Use a high contrast map and activate Median Filter.
4. Median Filter or post processing gray maps for optimum contrast resolution.
5. Sweep through network of nodes.

B-Color may be helpful in improving contrast resolution.

On Biopsy exams, use a 0–90 angle to see biopsy needle and tracks.

3DView Hints

Small Parts 3DView Recommended Settings

	Exam	Mode	RECON	PROJECT	AXIS	RANGE	VIEWS	SWEEP LENGTH
1.	Thyroid	B Mode	HI RES	MIN	VERT	45/45	18	0.5–3.0cm
2.	Thyroid	Color Flow	HI RES	MAX COLOR	VERT	45/45	18	0.5–3.0cm
3.	Testicular	B Mode	HI RES	MIN	VERT	45/45	18	0.5–3.0cm
4.	Testicular	Color Flow	HI RES	MAX COLOR	VERT	45/45	18	0.5–3.0cm

The numbered notes below apply to the number of the exam in the table above.

1. Reducing Dynamic Range helps separate solid tissue or mass from surrounding vessels.
2. See #1 above.
3. When evaluating a homogenous organ such as a testicle in B Mode or Color Flow, use the Median Filter to see soft tissue better.
4. See #3 above.

OB 3DView Recommended Settings

	Exam	Mode	RECON	PROJECT	AXIS	RANGE	VIEWS	SWEEP LENGTH
1.	OB Aorta Abdominal Vessels	Color Flow	HI RES	MAX COLOR	HORZ	45/45	18	0.5–1.0cm
2.	Cord Insert	Color Flow	HI RES	MAX COLOR	HORZ VERT	45/45	10-18	0.5–1.0cm
3.	Fetal Cerebral Vessels	Color Flow	HI RES	MAX COLOR MAX	VERT	45/45 0/90	18	0.5–2.0cm
4.	Circle of Willis	Color Flow	HI RES	MAX COLOR	HORZ	45/45	18	0.5–1.0cm
5.	Fetal Face	B Mode	HI RES	MAX	HORZ	45/45	18	1.0–2.0cm
6.	Fetal Spine	B Mode	HI RES	MAX	HORZ	45/45	18	0.5–1.5cm
7.	Fetal Humeral Head	B Mode	HI RES	MAX	HORZ	45/45	18	0.5–1.0cm
8.	Choroid Cyst	B Mode	HI RES	MIN	HORZ	45/45	18	0.5cm

The numbered notes below apply to the number of the exam in the table above.

1. Set Frame Averaging to 7.
2. Lower color gain to image individual vessels.
3. Scan coronal.
4. Scan transverse or axial.
5. 26–30 week fetus. Scan coronal or sagittal.
6. Include rib insert in editing CINE Loop.
7. Applies to fetal femoral head at 25–36 weeks as well.
8. Use small region of interest.

3DView Hints

Vascular 3DView Recommended Settings

	Exam	Mode	RECON	PROJECT	AXIS	RANGE	VIEWS	SWEEP LENGTH
1.	Carotid Sagittal	Color Flow SVI	HI RES	MIN COLOR	HORZ	45/45	18	0.5–1.0cm
2.	Carotid Transverse	Color Flow	HI RES	MIN COLOR	VERT	0/90	18	0.5–1.0cm
3.	Carotid	Color Flow	HI RES	MIN COLOR	VERT HORZ	45/45 0/90	18	0.5–1.0cm
4.	Venous	B Mode	HI RES	MIN	VERT HORZ	45/45 0/90	18	0.5–1.0cm
5.	Venous	Color Flow	HI RES	MIN COL MAX COL	VERT HORZ	45/45 0/90	18	0.5–1.0cm

The numbered notes below apply to the number of the exam in the table above.

4./5. Depends on how the sweep of scan is performed.

Hints

In Color Flow Velocity edit rendered CINE Loops, removing the frames that are not needed. Also raise the Color Threshold to increase color detail.

In B Mode, select different gray maps to obtain the best contrast resolution. B-Color is also useful to improve contrast resolution.

When vessel pulsatility is noted, increase frame averaging. If a vessel appears elongated in either direction on the 3D display, use a shorter sweep length to improve the image or edit the number of frames in the CINE Loop. Set the Frame Averaging to a higher level. When using opaque color maps, change the Color Threshold to 100%. In symmetric color maps, the Frame Average is preset to 7.

Hints, continued

The rendering time is dependent upon the number of CINE frames, size of the 3D region of interest, and choice of HI or LO RES and SHEAR reconstruction method.

The longer (more frames) the CINE Loop, the greater the rendering time.

The larger the 3D ROI, the greater the rendering time.

For cysts, sweep in the plane with the cleanest edges. Edit the CINE Loop to include only the mass. Use high contrast maps. Activate Median Filter. The 3D rendering brings out the edges of the lesion much better than 2D.

Use SHEAR to quickly view the 3D volume of interest to verify that all parameters have been set correctly.

On a biopsy exam, use a 0/90 angle to see the biopsy needle tracks during multiple passes into the lesion.

In B Mode, select different gray maps for the best contrast resolution. B-Color may be helpful in improving the contrast resolution of the mass.

Opaque maps tend to reduce noise in 3D Color Flow renderings.

In Color Flow Mode, try to minimize great changes in vessel orientation. Use a symmetric velocity map (SVI) to enhance color continuity.

Longer sweep lengths tend to create or appear to create greater separation of vascular structures.

Choose a sweep length that most closely represents the actual sweep length. A sweep length selection larger or smaller than the actual size may cause a distortion of the anatomy.

When using opaque maps, both MAX COLOR and MIN COLOR give the same result since no surrounding B Mode tissue is displayed.

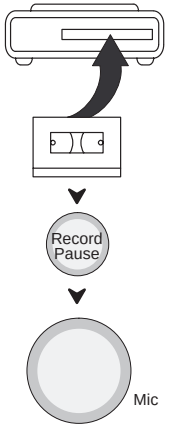
For Surface-rendered 3DViews, activate B-Color then adjust the window and color level to accentuate the surface of the anatomy to be rendered. Then deactivate B-Color, if desired, and render the 3DView.

VCR Recording

Refer To: Recording Images Chapter

Recording an Image

1



1. Insert tape into the VCR.
2. Press **Record/Pause**.
3. Push the **Microphone** to record audio voice over, if desired.

To pause recording,

1. Press **Record/Pause**.

To begin recording again,

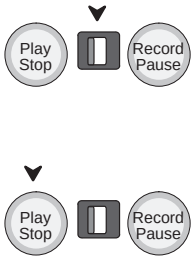
1. Press **Record/Pause**.

To stop recording,

1. Press **Play/Stop**.

Reverse/Fast Forward

1



To reverse/fast forward the tape (VCR stopped, image not displayed),

1. Click **REV/FF** to the left/right.

To stop,

1. Press **Play/Stop**.

To begin videotape playback,

1. Press **Play/Stop** again.

Search

1

To search backward/forward (during VCR playback),

1. Click **REV/FF** left/right.

Hold the key in place while the VCR is searching.

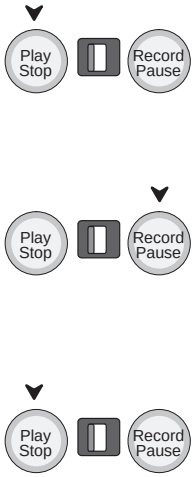
Playback begins when you release **REV/FF**.

Slow Search

1. Press **Play/Stop**.
2. Press **Record/Pause**.
3. Click and hold down **REV/FF** left/right.
4. Press **Record/Pause** to resume playback.

Playback

1



To playback an image,

1. Press **Play/Stop**.

To pause playback,

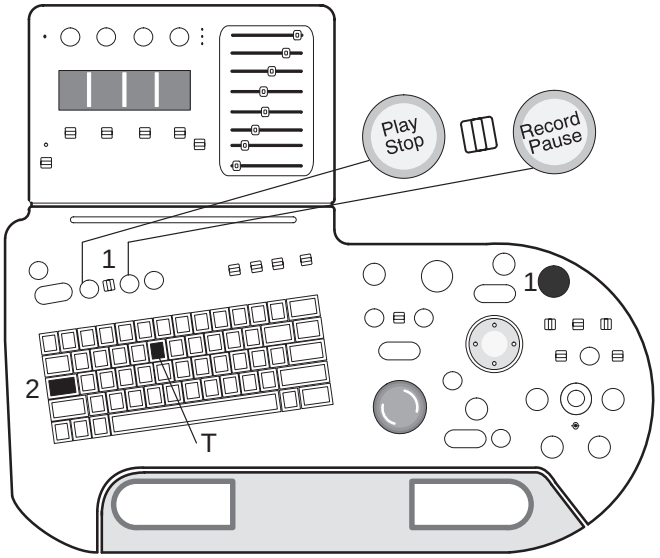
1. Press **Record/Pause** or **Freeze**.

To begin playback again,

1. Press **Record/Pause** or **Freeze**.

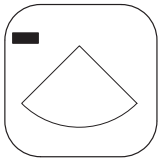
To stop playback,

1. Press **Play/Stop**.



VCR Counter

2



The VCR Counter displays in the upper left-hand corner as +/–Hour:Minute:Second (+0:07:00).

Code + T

To reset the VCR Counter,

1. Press **[Code T]**.

   You must have a cassette in the VCR.

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